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III

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VOLUME XXIII, 1916

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NOTE TO THE READER: There are in vogue so many synonyms for things and conditions that it is impossible here to enumerate them all (although many are listed); hence, the reader, if disappointed under one catchword, should exhaust the list of equivalent terms before giving up. (Example: Urotropin, formin, aminoform, cystamin, uritone, hexamethylentetramine. Or: Consumption, pulmonary cough, tuberculosis, phthisis.)

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Another Year

A HAPPY NEW YEAR!

We wonder how many resolutions will be breathed into the oft-repeated expression of this greeting during the next few days. We wonder yet more largely how many such resolutions will be forgotten and broken before the year is a month old. Not that we are cynical—bless our editorial heart, no! Nor is the smile that lurks on our lips even a pitying or pathetic one. It is only the complacent, knowing smile of the philosopher.

Even the five-year-old (who, by the way, knows nothing of resolutions) has already perceived, in elementary fashion, the philosophic truth that lies behind our superior smile. One of these tots, after a (for him) long stretch of silence the other day, announced the profound axiom: "When you're borned, you're borned, and you can't be borned any elser."

There you have it!

There will, let us hope, be some improvement in our lives in the coming year. Heaven knows, there is room enough for it. Not, however, because we make resolutions, but because time and experience and the sense of life slipping away will mellow us. But in the main we shall stumble along in the same old way, blundering, sinning, planning, and

forgetting, but on the whole doing the best we know how.

We may be sure of one thing, however. There is this note of fatality in the youngster's discovery. We must tread the path that the New Year stretches before us, and every succeeding year, until we reach the turn where "the Shadow sits and waits for us."

As the child quaintly said, "When you're borned, you're borned."

It is like buying your ticket and entering the car of a "dip-the-dips," "loop-the-loop" scenic railway. You must go the rest of the trip. No matter what bumps, and shocks, and hair-raising twists you may encounter, there is no getting out of the car until the end is reached. You can only shut your teeth, and clench your hands, and hold tight to the car, and go the route—unless, indeed, you are tipped out by a smash-up, and even that you cannot forestall or prevent. It's a great game—this life of ours!

We fear we may be laying ourselves open to the criticism of treating a solemn subject with levity, if not with frivolity. Well, perhaps we are. It's a case of reaction. We were impressed with the weight of the task and the gravity of the conditions under which the New Year dawns, to write a serious

editorial befitting the situation. But the very solemnity of the thing oppressed and crushed us, and for sheer escape we turned to the lighter aspects of life.

Happy thought! Why not make a New Year's lesson out of this very incident? A common fault of us physicians is that we take life too seriously. We are a little better in this respect than we used to be, since organization has brought us into social relations with each other. But we are still burdened with it. We worry unconsciously, and carry too much responsibility.

One of the most helpful lessons life can impart to us is to do our work as well as we can and then let the results take care of them selves. How often have all of us been amazed to find things come out much better than we anticipated!

Napoleon used to leave his mail unopened, so they say, for a month at a time, and then found that the majority of the letters had answered themselves. A trifle extreme, perhaps, but still evincing a lot of good sense. The great unseen power that guides our lives through a wilderness of trial and tribulation will also guide our ship through the fogs of difficulty and perplexity, safely into the desired haven. To change the figure into the beautiful imagery of Bryant,

He, who, from zone to zone
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone

Will lead my steps aright.

The one plain duty of every man is to face the future as he faces the present, regardless of what it may have in store for him, and turning toward the light, as he sees the light, to play his part manfully, as a man among men.—Theodore Roosevelt.

WHAT SHALL THE DOCTOR READ?

The man who does not move forward and upward moves backward and downward. There is no such thing as standing still, for any human being. Tell me what you read, and I will tell you what you are becoming. However, there is so much one should read, so much that one must read, that the choice is becoming a difficult one.

Doctor must read the newspapers, local as well as metropolitan—he must know what's going on.

Doctor must read the magazines, some of them—he must know the trend of human thought and progress.

Doctor must read medical periodicals, special and general, and such of the new books

as most subserve his needs in his special line of work.

Besides these, he must read ahead—must add to his store of general information; for, the community must look up to its medical adviser as the authority on all manner of subjects; and it is to his advantage that he cultivate this sentiment.

But how is a general practitioner to find time for all this enormous amount of reading and, yet, attend to practice, keep an eye on his interests, collect his fees, and occasionally even devote an hour to his family? The doctor religiously inclined also wants to go to church occasionally; although this should be considered an entirely voluntary rather than an obligatory part of his life, because of the very nature of his vocation. Here is the plan adopted by the present writer—it works well with us, and it may serve some of you:

Invest in the latest and best cyclopedia, and take a volume to bed with you; look over the articles, skipping judiciously, and read the items that chance to interest you. Somewhere you come upon something that opens a subject in which you are more especially interested, and you may feel impelled to secure works devoted to it and in this way to pursue the subject further. The matter may be something that at the time is agitating your community and upon which you are almost sure to be questioned; or it may be a matter about which you will be able to give valuable enlightenment to a friend.

The cyclopedia is, in effect, an index to information, and if one treats it as such the general knowledge obtained from it, added to that more extended information gained from the special works suggested, will go far to make a man justly credited with being well informed.

Outside the purely medical reading, the one thing the doctor must understand thoroughly is sanitation—personal, domestic, municipal. The doctor must know more about this than anyone else in the community, and be prepared to advocate and direct it at all times. The profession, as a class, should consistently push toward the position of advisers of the people, in all that pertains to the prevention of disease and the prolongation of life—a useful, enjoyable life. The future of medicine lies right here; and he who appreciates this fact and directs his steps in this direction will find himself on the right road, and ahead of his fellows.

We have been preaching this doctrine for many years, and it is with pleasure that we

see how so many are taking up the cry. We see in this the only right solution of the evils besetting the medical profession—poverty, lack of appreciation, unlawful and unwise competition. We are waiting patiently for the body of our fellows to take up this problem and put it into practical operation.

There is no doubt whatever of the fact that the proximate principle is here to stay and that the isolation of these substances has advanced therapeutics wonderfully. Modern pharmacology will be the basis for prescribing by the on-coming generation of physicians, and modern pharmacology deals largely with proximate principles, the employment of which is destined to grow as exactitude in prescribing grows.—Dr. Thomas S. Blair, in "The Medical Council."

EDWARD LIVINGSTONE TRUDEAU

Whenever I think of tuberculosis—I mean, of course, whenever I think of it in its broad, human relationships—I think of three men who, because of their valiant fight, not so much against the terrible disease as in the teeth of it, have always inspired me with a devoted hero-worship. These men are Robert Louis Stevenson, Henry C. Bunner, and Edward Livingstone Trudeau.

These men looked continually into the face of death with a smile on their lips. They lived cheery, busy, useful lives, albeit much of their activity was directed from a sick-bed; so that there is left to the world only the memory of their strength, and not of their weakness. Two of them, Stevenson and Bunner, chose to ignore their arch enemy. They were both literary men. Neither in their private nor in their public writing did a single reference to their affliction escape them. They both gave to the world a genial, wholesome humor, and died, at last, with the smile on their lips.

Trudeau chose another course. He elected to make a deliberate and heroic fight against the disease that attacked him, both in his own behalf and in that of others. He bravely turned his own misfortune into the occasion of a public crusade against disease and death. He has generalized the modern forces of the antituberculosis campaign.

Stevenson and Bunner died several years ago. Trudeau outlived them—a tribute to the effectiveness of the warfare that he waged. Many and many a stricken man and woman could bear testimony to its effectiveness, too. Death has claimed him at last. In a sense I suppose it may be said that tuberculosis got him in the end. If the enemy can get any doubtful satisfaction out of such a questionable triumph, he is welcome to it. The verdict of the world will be that the triumph lay with

Trudeau—physically, for he lived, happily and usefully, more than the average span of human life; morally, for he led the way to a final conquest of the foe. "He has fought a good fight, he has finished the course, he has kept the faith; henceforth there is laid up for him a crown of righteousness, which the righteous Judge shall give him in that day."

CARDIAC STIMULANTS

Heart stimulants are remedies that rapidly increase the force and frequency of the pulse when depressed. They are employed to prevent or to relieve failure of the heart's action, in syncope or shock, as a consequence of emotion, trauma, cardiac sedatives, snake poison, febrile conditions, or other maladies. Among the leading agents of this class may be mentioned the spirit of ammonia, alcohol, atropine, ether, chloroform, camphor, and aromatic volatile oils. Important physical measures are: heat or cold or counterirritants, applied over the heart.

Brunton attributes most of the effect of alcohol to its direct stimulation of the mouth, throat, and stomach. Hence, to secure this effect, it should be given in concentrated form. More powerful local irritants have more cardiotonant action. The Hindus have a saying that in conditions of profound depression it is necessary to bring the tears into the eyes in order to break the shock of the initial stage of dysentery, cholera, and other violent tropical seizures. Accordingly, they administer pungent combinations as, for example, equal parts of chloroform, camphor, tincture of capsicum, oil of cajuput, with $\frac{1}{4}$ parts of ether, taken, undiluted, in teaspoonful doses. This mixture accomplishes the object quite surely, much more effectively than does pure alcohol or any of its preparations, provided the patient can swallow it.

Ether and chloroform merely are stimulant in the same manner; that is, by local irritation; and the latter only in small doses.

Ammonia acts like alcohol, but also by stimulating the vasomotor center. In treating snake bite, water of ammonia has been injected into the veins in 1-2-dram doses. The stimulation is immediate, but evanescent. The same medication has been employed to resuscitate persons apparently dead, and it even has prolonged life for a period sufficient for the dying patient to finish important business.

Brunton's guide as to the use of alcohol is, that its effect is to be judged by its action upon the circulation, to wit: if alcohol

brings the circulation nearer to normal, it is beneficial; if not, it is deleterious. So, alcohol may slow an excessively rapid heart or accelerate it when too slow; also, it may render a small, soft, compressible pulse larger, fuller, and more resistant.

The application of camphor as a heart stimulant is limited to these conditions: fevers, with a tendency to failure of the circulation, as in the typhoid group; the eruptive fevers, with delayed or retrocedent eruption; asthenic forms of pneumonia, and the typhoid state when appearing in any malady. Camphor now generally is administered hypodermically in oil solutions, although it acts more speedily taken internally in concentrated form, as in the mixture, quoted above, used by the Hindus. The effect is more sustained than that of alcohol or ammonia; however, the local irritation may eventuate in active inflammation, while large doses may occasion grave irritation of the urinary tract.

The volatile oils resemble camphor in their action as well as in their dangerousness in overdoses.

In capsicum, we have the maximum of local stimulation with the minimum of dose. The old Thompsonian "Number 6" (tincture of capsicum and myrrh) was a safer and more effective stimulant than any of the foregoing, and it has no superior, if an equal, among our modern agents. Even for the purpose of breaking up or preventing a cold after exposure to cold and wet, a cup of hot capsicum-tea is the best remedy at our command. It is the ideal stimulant, by virtue of usually being immediately obtainable, acting quickly and powerfully, and leaving no bad after-effects; while it also is applicable for any accessible diseased mucous membrane and of the skin. In the form of the oleoresin, more stimulant can be carried in a dram-vial than in a gallon-jug of whisky.

One of the most powerful cardiac stimulants is heat, whether applied by way of the stomach or to the surface of the body. The hot-water-bag has replaced the ancient poultice and the numerous objectionable oldtime medicaments. When the temperature, that has overstimulated the heart, falls rapidly, the hot application over that organ may prevent or check the tendency to collapse.

The application of cold over the heart powerfully stimulates its action; however, the influence is of brief duration, while the continued application depresses. Frigotherapy at best is a laboratory method rather than a clinical one, to be resorted to in an emer-

gency, when there is no time for other measures, but quickly to be replaced by remedies of more enduring action.

Pain is a powerful stimulant. Threatening chloroform narcosis has been interrupted and life sustained by the forcible dilatation of the anal sphincter; opium-narcotism has been held off by pushing a sharp blade under the finger-nails.

A stimulant is a remedy that, acting instantly and powerfully, arrests the fall of vitality and arouses the failing powers of the system, especially of the cerebral centers. It is merely a whip and necessarily must be followed by measures calculated to ensure a continuous restoration of strength, that is, tonics and nutritives.

The passions have been utilized thus; and the spirit, pluming its wings for flight into the Hereafter, has been called back to earth by the sudden arousal of love, duty or jealousy.

There's a good time coming, boys.

A good time coming,
War in all men's eye shall be
A monster of iniquity.

In the good time coming,
Nations shall not quarrel then
To prove which is the stronger;
Nor slaughter men for glory's sake—
Wait a little longer.

—Charles Mackay.

LO, THE POOR CONSUMPTIVE!

To the practitioners in the resorts patronized mostly by the tuberculous, we rightfully look for expert information concerning tuberculosis and its victims—and we generally get it. Not all men—including doctors—are clear as crystal in their transmission of the facts presented to their mental view; often they communicate their own color—blue, green, red, yellow—while any ocular or mental shades they may be possessed of are likewise imparted to the verbal pictures they thus present. Many a gloomy prognostication is founded, not so much upon the ominous condition of the patient, as upon the doctor's need of a liver-pill.

To all of which we find a notable exception in Thompson Frazer's article in *The Charlotte Medical Journal* for November, 1915. It is entitled, "What the State and You Can Do for the Consumptive." The "you" is particularly refreshing in these days, when so many are asking the State to do all but chew their food for them, while they themselves

lie back and take their ease. There may, after all, still be found a remnant of the old pioneer stock, that could take its own part and needed no help or supervision, nor asked for it. Doctor Frazer writes from Asheville, where he surely has abundant material for study.

Specifically, Doctor Frazer calls upon the State to care for the indigent consumptive. Poverty is one of the essential factors in the etiology of tuberculosis, as this disease occurs most frequently among those who can not afford fresh air, sunlight, dry and warm dwellings, good food, not to mention all the other sanitary prophylactics. These indigent consumptives are the greatest peril to any community, and it is worth while for every healthy citizen to aid in removing this threatening menace against his own health. One may be working in office or shop with the tubercle propagator, may be drinking milk from a consumptive's cows, one's children may sit in school beside the infected child of a tuberculous parent; in truth, the perils from all other infectious maladies taken together do not equal those from the tubercle-carriers.

Tuberculosis is readily curable in the early stages; however, the treatment is costly and the poor can not afford it. There are too many consumptives for private benevolence, and the danger is so universal that general prevention alone can cope with it. Were we to provide for nineteen consumptive children in a given school, even then the twentieth, if neglected, might infect the other healthy pupils.

To the State, Doctor Frazer specifically assigns the following duties: (1) The maintaining of a free dispensary, where the diagnoses may be made early; (2) maintaining a sanitarium for treating the poor in the early, curable stages; (3) providing school inspection and fresh-air schools for children below par; (4) providing a whole-time qualified health-officer who is to look to the enforcement of the law; also visiting nurses, and a hospital for advanced cases; (5) exacting compulsory notification by physicians.

Considering the danger to the public from these cases and their inability to pay for the expensive treatment necessitated, these demands are no more than can justly be asked of the community. The only alternative seems to be, to adopt the open-air method and turn the creatures out, to live or die, as the powers above may determine.

This leaves important duties to the individual: To give moral and financial support to the State in the fulfilment of its part; to

do each his share in combating the evils of poverty that render tuberculosis so prevalent and fatal, by seeing to the enforcement of child-labor laws, factory inspection, and living-wages for the laborer, such as will enable him to provide the decencies of life for his family; to organize anti-tuberculosis societies; to contribute to the care of those who can not care for themselves.

This means something more than dodging one's taxes, slipping a "V" to the inspector, to induce him to ignore the ventilation and light restrictions of building-authorities, going into the open market and buying labor so cheaply that men must herd together like rabbits, to live on their earnings, cutting taxes for schools so closely that warmth and ventilation can not be supplied to the kiddies, or in other ways treating the community like a business competitor, who is to be "skinned" to the limit.

When the practice of mankind shall have attained to the level of its knowledge, when its art ranges itself by the side of its science, then we shall see the end of preventable maladies, and then, also, there will be material for new diseases or for wars bigger than the "crime of 1914."

Sachs comes in with a telling presentation of the "responsibility of the city," in a contribution to *The American Journal of Public Health* for November, 1915. He asserts that the trend everywhere is toward a gradual supplanting of the enthusiastic pioneer work of private antituberculosis organizations by the more comprehensive, more correlated system of control of the disease by efficient municipal health-departments. Efficiency calls for concentration of effort and authority. The problems include hygiene of streets and alleys, freeing of the air from smoke and dust, extending vacant spaces between buildings and converting them into parks and playgrounds, building-regulations for dwellings, schools, public buildings, and shops, and systematic supervision of schools and children. He concludes:

"In the further development of the present arrangement for the control of tuberculosis, municipal health-departments must gather strength, be given funds, and acquire the support of the medical profession and the people at large, in directing a campaign against this most widespread disease of modern times. Efficiency calls for united effort, with centralization of authority. The spirit that makes possible the country-wide effort of private organizations must finally find its expression in the enthusiastic support given

to modern health-departments, in full accord with their enlightened communities."

The North Carolina Health Bulletin names the following facts, signs which everybody should know:

"Your chances for recovery depend upon an early diagnosis.

"A hemorrhage from the lungs means tuberculosis, without exception.

"A morning subnormal temperature, with afternoon rise, means tuberculosis, 99 times out of 100—and probably in the 100th case.

"A low blood pressure is suggestive of tuberculosis.

"A cough lasting more than three weeks should suggest tuberculosis and cause resort to a physician.

"The tubercle-bacillus in the sputum is a positive sign of tuberculosis, but the diagnosis should be made before this can be found."

That Michigan is awake to the importance of this matter, is evidenced by the state legislature's appropriation of \$100,000 for two years' work in the prevention and eradication of tuberculosis. *Ourdoor Life* suggests that this sum be utilized in a survey and study of the situation, and an extensive and intensive educational campaign.

Write it on your heart that every day is the best day in the year. No man has learned anything rightly until he knows that every day is Doomsday.—R. W. Emerson.

LOBELIA AND ITS ALKALOID

Since Samuel Thomson introduced the Indian-tobacco as a remedy, this American plant-drug has been a mainstay of his successors and of the better educated disciples of the botanic "schools" that followed after them—and, naturally, the *bete noir* of their opponents. This opposition sentiment happily has died out—we live in the present, and are not disposed to trail about with us the antagonisms and absurdities of the remote or recent past. Still, the profession is sharply divided as to the merits of lobelia, as between those who, using it habitually, rely upon it as a most valuable remedy, and those who, never having employed it, look upon it as useless or even dangerous.

A physician of the "big" school, a friend of ours and a man who enjoys the respect and confidence of his colleagues, has presented his views on lobelia, with a sequence of opinions thereon collated from the literature of the century. Dr. C. W. Hunt makes this presentation in the current issue of *The Charlotte Medical Journal*. Quiet and sensible, with-

out overenthusiasm or that determination to condemn which spoils most of our investigations of drugs fathered by outsiders, Doctor Hunt's paper is at once a valuable contribution to the subject and a model of what such papers should be. He calls himself an optimist, having faith in his remedies, and adds: "Faith born of careful study will not be disappointing when coupled with proper diagnosis and application." Surely. Following are several more quotations from his essay:

"1858. Wood: Pseudomembranous croup. The internal use of lobelia is here highly serviceable."

"1868. Stillé: Elliotson writes that it is the best medicine for spasmodic breathing. Bower says, in all cases where dyspnea is an urgent symptom, lobelia is applicable. Neuman terms lobelia one of the most valuable medicines in diseases of the lungs, relaxing respiratory spasm with incredible rapidity, even when dependent on organic disease, as of the heart, with tormenting dry cough and insufferable tickling in the throat. Nothing approaches the action of lobelia, direct and specific, upon the motor respiratory nerves. It is speedier and more certain than digitalis, more direct than ipecac."

"Schlesier, Andrews, Morelli, Tott, and Erble confirm these encomiums. But Flint, in the same year, stated that lobelia was not prescribed."

"1880. The lecturers at the P. & S. College of Baltimore pronounced lobelia depressing, unreliable, and too irritating; the sole use suggested was as a local application for rhus poisoning."

"1883. Bartholow, who drew largely on the work of the Cincinnati group, confirmed the foregoing recommendations and advised lobelia for impactions, intestinal atony, hernia, and intussusception, by enema. He still found it harsh and dangerous, but thought it might find place in treating tetanus and strychnine-poisoning. Ott now investigated the alkaloid lobeline and defined its activities. It first increases vascular pressure, by exciting the peripheral vasomotors, followed soon by a fall, the heart weakening, the peripheral circulation embarrassed and the lungs obstructed, so that oxygenation is rapidly impaired and the temperature falls; the action centering on the motor nerves, especially the medulla and the respiratory center, the nucleus of the pneumogastric."

"Biddle followed Flint, but Ringer used lobelia in large doses as a remedy for respiratory spasms."

"1889. The U. S. P. dilates especially on the effects of toxic doses, but repeats the uses for spasmodic maladies."

"1897. Waugh: Finds the alkaloid less apt to induce nausea, stimulant to digestive tract, irritating in overdoses; expectorant, laxative, diaphoretic; suggests small and repeated dosage, to increase the activity of vegetative functions, innervation, and circulation, in minute doses; for angina pectoris, full doses, also for rigid os or perineum; small doses energize uterine contractions; as sedative, in fevers and local inflammations. Here we have the first intimation of the all-important differences between small and maximal doses. The previous unfavorable views were based on toxic dosage."

"1906. Shoemaker: Repeats the effects of large doses; notes the diuretic and narcotic actions; but draws the line, with lobeline, between the small- and large-dose effects; he warns against its use in cardiac dyspeas; quotes Nunez' eight cures of tetanus, and introduces the hypodermatic use of lobeline."

As we have remarked, those who have not made themselves familiar with lobelia dread its violence and term it too dangerous for use. As with aconite and veratrine, these fears subside after better acquaintance. There is less reason for them than with antimony, which adds a serious peril from local irritation; and far less than from mercury, which entails later dangers, besides. Doctor Hunt, a respected member of the dominant school, has made himself familiar with lobelia, and he has this to say of it:

"I consider lobelia the kind of antispasmodic . . . regulating the circulation, like aconite and veratrum; actively antispasmodic, like tobacco . . . its nauseant effect guarded by opium, if too depressing to the heart, adding cactus . . . lessening the force of the heart in full doses without slowing its rate . . . I have prescribed it in small, medium, and very large doses, and I have never witnessed a violent or dangerous effect. Lobelia, like aconitine, antagonizes the febrile process, lessens respiration, especially in mucous inflammations, where its secretion stimulus is shown . . . ideal for spasmodic colics or for an overloaded stomach, given to emesis; tonsillitis, acute pharyngitis, tonsillar ulcer, asthenic diphtheria, acute catarrhs, catarrhal bronchitis, pneumonia, overaction of the heart, peritonitis, puerperal metritis, cerebrospinal meningitis, acute maniacal delirium, active cerebral congestion, neuralgia, ovarian congestion, rigid

os uteri and perineum, asthma; and in puerperal eclampsia with the II-M-C tablets."

This shows the wide range of application for this remedy in the hands of a man who knows it and can handle it as a good carpenter does any sharp-edged tool.

DOCTOR REGISTER AND HIS JOURNAL

Dr. Edward C. Register has been elected president of the Medical Editors' Association for the coming year. Doctor Register, as editor of *The Charlotte Medical Journal*, has given us a fine example of what can be made of a local periodical. Issuing from Charlotte, the journal covers the Carolinas, the Virginias, Georgia, and eastern Kentucky and Tennessee. It is supplied with articles contributed by the physicians of this section—the November number containing seven contributed by North Carolina physicians and one by a Virginian. A large part of the advertising is also from local interests. In point of quality, the reading pages compare favorably with those of any journal from the "great medical centers." The material as a whole is instructive, interesting, up to date, and clean. Altogether, Doctor Register has fully earned the honor conferred upon him.

I do not ask for more to seek and love me,
I do not ask for brighter eyes to move me,
But sharper sense, to miss no hailing sign
Of fellowship in spirit seeking mine.
No golden shore I seek, but a heart that sings
The exquisite delight of common things.
The kingdom of heaven is not there, but here—
Oh, for the seeing eye and hearing ear!

—Frank Crane.

ARRESTS OF PHYSICIANS UNDER THE ANTINARCOTIC LAW

Two Chicago physicians have recently been arrested for violations of the anti-narcotic law, and one of these was tried and convicted. This man, it was shown, had written thousands of prescriptions for narcotic drugs. We have not had an opportunity to review the evidence in his case, having been compelled to depend for information upon the newspaper reports, but it appears that he had become the source of supply for a great many victims of the drug-habit. Nevertheless, this physician claimed that he was treating these patients by the withdrawal method; that in many instances he received no pay whatever; and that his office was simply thronged by hundreds of poor wretches who appealed to him for relief. He believed, he avowed, that he was doing a righteous

work. However, the wholesale way in which he wrote prescriptions for those people was enough to arouse suspicion on the part of the authorities. The punishment given him by the court was very severe. He was fined \$2500.00 and sentenced to five years in prison. Apparently his conviction was just.

The other physician was a man of excellent reputation, whose story was told by Dr. J. V. Fowler, at a recent meeting of the Council of the Chicago Medical Society. We quote his remarks, as printed in *The Bulletin* of October 16:

"The doctor was visited first of all by a patient who was a drug-fiend, and who was suffering from the effects of the withdrawal of the drug. The doctor was urged to take the case. At first he refused and tried to get the man to go to some institution. The man made excuses, saying that he couldn't go at the present time and wouldn't go to the County Hospital, but stated that, if he could only get on his feet for a while, he could earn enough money to take the treatment. The doctor gave him some morphine, which he recorded. The man came the second time, and this time the doctor cut down the amount of the drug so that he had a smaller amount to last a greater length of time.

"Later on, possibly a week, a lady appeared, representing herself as the patient's wife; she stated that he was very much better and had almost dispensed with the use of the drug. She described the man, told his address, and the like, and, the doctor gave her a small bottle of a weak solution of codeine, but told her not to let her husband know it was a weaker solution; also told her not to come again, as he would not give her any more, stating that her husband must come. She came again about a week afterwards, stating that her husband could not come, and he gave her another still weaker solution. In a few minutes, there appeared a couple of detectives and locked him up.

"His wife telephoned me. I found he was booked for 9 o'clock the next morning. I immediately got busy and did everything I could to get him out of jail, but all to no purpose. When the case came up he was discharged. A reputable man was thrown into prison, without any charge for any crime; no friends could see him or learn anything about it, except that he was locked up. He was held in jail over night; and the papers published it broadcast. His reputation is affected to such an extent that possibly he will never live it down. And all for what? Nothing! It is time that we were putting

our shoulder to the wheel and stopping such prosecutions. We are in sympathy with the purport of the law and we are all anxious to catch the violators of the law, but to throw a man into prison on suspicion alone is not a thing that should be allowed to exist. I hope this Council will take action in this matter when it comes up for action."

We bring these two cases to the attention of readers of *CLINICAL MEDICINE*, so that they may understand the importance of making themselves conversant with the provisions of our narcotic legislation. Last month we printed some of the recent federal regulations.

For the man who deliberately traffics in narcotic drugs merely for the sake of making money, and without thought of the welfare of the poor unfortunate people who are made to suffer by it, we have no sympathy whatever; nevertheless, we must protest against the enforcement of the law in such a way as to hamper any physician who is trying honestly to relieve suffering.

As we have said in the past, there is no reason why any physician should feel alarmed about this law. Whenever the doctor has a legitimate use for a narcotic drug, he should so use it, just as he has always done in the past; however, he should give it intelligently, make the records required, and obey all of the law's provisions with the utmost care as to detail. *Under no circumstances should he allow himself to become a regular source of supply for persons using narcotic drugs improperly.* Addicts should be treated by the doctor in person, and never through the intervention of a third party.

Any physician who will take such care will never get into trouble.

The first three or four men who come to mind who have acquired wealth in the practice of medicine are not spectacular, and have not cared whether they acquired wealth or not. — Robert T. Morris.

THE RELATION OF CONSTIPATION TO VARIOUS DISEASES

Half a century ago, the great Jean Martin Charcot declared that "ninety-five percent of all diseases have their origin in the digestive tract." In his day, and from his standpoint, of course, this assertion was a purely empirical inference, drawn from continuous clinical observations, and whatever weight it had was derived from the personal authority of the man who uttered it. Several years later, Charles Bouchard, doubtless following out the ideas of Charcot, with whom he was early associated, carried out an extensive investi-

gation of the influence of the condition of the gastrointestinal canal upon bodily health, applying to his researches what were in those days scientific methods, and, as a result, enunciated his famous doctrine of gastrointestinal autointoxication, which latter term he coined.

Both of these men's teachings received a great deal of attention at the time of their publication, and bade fair to furnish the key to many obscure problems in medicine. These teachings, in fact, represented the rational, scientific exposition of the concept of disease, which up to that time had held the field rather vaguely; and they may be regarded as the climax of the earlier stage of modern medicine. The "humors" and "diatheses" of the older school received a definite and intelligible signification in this newly announced phenomenon of absorption and intoxication from the gastrointestinal sewer. Both theory and experience seemed to confirm the doctrine; it gained general currency; and the therapeusis to which it gave rise justified it.

With the discovery of the microorganism and the demonstration of the important part played by bacterial infection in the production of disease, there came a revulsion of professional opinion and sentiment. Everybody rushed to the microscope and the culture-tube, and in the stampede Bouchard's doctrine of autointoxication was swept aside and contemptuously discarded.

Nevertheless, it is worth remarking that even in this recoil and up to the present day medicine never really lost the impress made by the teaching of Bouchard. The cleaning out of the gastrointestinal tract never ceased to be a prime factor in the treatment of disease; nor has there ever been wanting, during all the intervening period, faithful and influential advocates of Bouchard's views. But, to some extent, the advent of the doctrine of bacterial infection and the prevalence of all the views and practices to which it gave rise temporarily eclipsed his teachings and prevented the investigation and elaboration which they deserved.

Among those who continued to believe in the importance of gastrointestinal autointoxication and to shape their therapeutic principles and practice by it, we humbly (and, yet, with considerable pride, too) point to ourselves. In season and out of season, we have not ceased to preach the therapeutic doctrine of "clean out, clean up, and keep clean," as being an elemental principle in the effective treatment of disease. We have

stoutly maintained, often in the face of opposition and ridicule, that intestinal toxemia is the *fons et origo* of many otherwise obscure disorders, and that even where the pathology-in-chief was a bacterial infection, or something else, the absorption of intestinal toxins created a vicious circle that aggravated the disease and hindered, if it did not prevent, recovery.

At last it seems that Charcot's and Bouchard's position—and our own steadfast adherence to that position—is to be justified by present-day confirmation. The psychology of the medical scientist apparently is not very different from that of the man in the street, after all. It needs that a perfectly obvious truth, which anyone with eye might see for himself, shall be uttered with the force of some popular personal authority in order to be recognized and become current. With that, however, we shall not quarrel. We are only too gratified to see that the truth is coming into its own, by whatever channel it be.

To Sir William Arbuthnot Lane, the English surgeon, must be credited this modern rehabilitation of Bouchard's really epoch-making doctrine; and, largely because of Lane's prestige and influence, many other able men have lately given considerable time and attention to the subject. To be sure, it has been approached from a somewhat different angle: from the surgical rather than from the medical, the anatomical rather than the functional. But, in the ultimate result, it is all one. For, if kinks in the bowel and intestinal stasis bring about bodily disorders, it can be only by reason of intestinal toxosis in its broadest intent.

From the theoretical standpoint, the recent work of Arthur Keith tends to emphasize the functional aspect of the matter; while from the clinical angle the observations and investigations both of surgeons and internists in our own country as well as in England, are slowly, but surely, establishing an unmistakable relation between constipation and various diseases in which such relations have heretofore been unsuspected.

It is not for the mere purpose of saying "I told you so" that we call attention to this important subject, but to make a renewed plea, in the light of this modern awakening, for more and more consideration of the intestinal canal as a positive source of mischief in many disease-conditions and a potential cause of trouble in many others. The work of Lane, Keith, Reed, and others gives a new significance to the plea that we have been making for the last twenty-five

years, "Clean out, clean up, and keep clean"; and it suggests a large field of clinical research—in which we urge our readers to take part—into the causes and effects of constipation as an important factor in disease.

If man had never been hungry for woman, and if woman had never been hungry for man, none of the finer traits of human character could have been developed. Love, art, music, poetry—in short, all of the finer qualities that have gone so far toward making life beautiful, could never have existed.

—Lee Alexander Stone.

THE PATIENT OF MODERATE MEANS

We have long been of the opinion that the present method of dealing with persons of small means who are the victims of obscure illness is unsatisfactory. Patients of the poorest class can secure expert examination and advice by entering a large hospital, where they have the benefits of consultation with different experts. Wealthy persons can employ the services of numerous experts to determine their ailments, by paying large fees for such information. Persons of limited means, however, can neither expect to be treated as paupers nor afford to pay for numerous expert opinions. As the situation stands at present, therefore, most of these unfortunate patients are cut off from the best of modern scientific medicine.

This is a situation which must have impressed every practitioner. In a general way, we feel that the matter of dispensary service is not on a proper basis. We have always felt that in offering himself for clinical demonstration a patient was tendering more or less of a *quid pro quo* for the medical or surgical service that he received, rather than availing himself of any species of charity, and that the restriction of such service to those unable to pay for it is fundamentally wrong.

To be sure, such a proposition is open to the objection that it would tend to bring about an abuse of clinical advantages, and an injustice to the practicing physician. Perhaps it would; but we doubt it. As the matter stands today, there are large numbers of people receiving clinical attention who could afford to pay a moderate sum to a doctor, and a still larger number who, under the present system, will not submit themselves to the clinic who are really worthy of it, and whose cases would serve the cause of medical education admirably.

It is, of course, right that the indigent should receive the prime and full advantages

of clinical service; and it is equally right and proper that those who can afford to pay for medical service should do so. But we see no reason why either of these principles need be violated when the person of moderate means is given a share in the scientific advantages of the day at less than the usual rates. Why may not a person of this class be permitted to pay a small or moderate fee for his attendance or his operation, with the additional understanding that if he permits his case to be demonstrated in teaching, this service, on his part, will be counted as making up the balance of the fee required by the hospital and the expert? By such an arrangement, all the objectionable element of charity would be eliminated from the situation, and the patient of small means could secure all the advantages of modern clinical skill if he chose to avail himself of them.

This is one way of remedying the situation. Another way is the plan described in our editorial pages in October—for physicians to group together and act in concert. Surely, in every community of any size there can be found a number of men engaged in special lines of practice who would be willing to co-operate for the benefit of the patient with moderate means, without loss to themselves or hardship to the patient.

IS AGE A PREVENTABLE DISEASE?

The man who questions popular beliefs is a hero and deserves the plaudits of his fellows. While their associates exclaimed against the impiety of those audacious spirits who first asserted that natural phenomena, such as lightning and storms, were not manifestations of divine anger, that arrow-heads were not thunderstones, and that sea-shells found on mountain tops were not created there, but evidenced the one-time presence of the sea, they stirred the slumberous depths of human thought and set the world moving forward.

Our gratitude is due to Metchnikoff, in that he, among the first, questioned the inevitableness of senility and asserted that it, like other diseases, might be prevented. Whether the Bulgarian bacillus be really an effective agent in this work, is of less moment than the impetus he gave to investigation along a road hitherto believed to be closed.

A century and a half ago, a great Dutch physician—Hufeland—published a work on the art of prolonging life. Hufeland is almost forgotten now, his name lingering only as a purloined disguise for a brand of bad whisky

spoiled by some bitter ingredient; but he was the foremost savant of his time. His book was translated, a century later, by Erasmus Wilson, who then found nothing that could be added to it, with advantage.

In *The Medical Summary*, Doctor Terry, ex-surgeon general of the New York State National Guard, contributes an article that may be taken as expressing the current views on this topic. Terry prescribes a morning hot bath, with massage, "unloading the tissues of the structural changes incident to metamorphosis"; then a quarter-hour of calisthenics; two bowel movements; rise immediately on awaking; prevent arteriosclerosis by avoiding overfeeding, balancing supply and demand; diet suited to the needs in quantity and quality. The bodily requirements should be met by a diet of fruits, cereals, vegetables, nuts, and sea-food; excluding red meats, beef, sweetbreads, pork, ham, and sausage. He does not place milk in either list, but we presume it should be permitted; and, if so, taken in any form that is most palatable, with preference for the sour varieties—buttermilk and clabber, leaving the bacillus Bulgaricus for debate. The system has its value, but does not seem to reach the merits of the question.

Metchnikoff's proposition embraced two points—the dependence of the changes incident to age upon intestinal toxemia due to specific microorganisms, and the opposition to these waged successfully by the bacillus bulgaricus. To a certain extent, we feel disposed to consider the former as probable, the latter as possible. But we do not accept the idea that this covers the entire ground, nor that autotoxemia accounts for all the phenomena of age.

Take the mechanism of the condition known to us as sclerosis or cirrhosis: we have the afflux of blood following exercise, inducing an exaltation of the functional activity of the specific cellular elements of the part, as we see in the stomach after taking alcohol. But no irritant can make a cell; and the development of any tissue by exercise has its limits. The muscles of the athlete develop just so far, while continued effort only results in spurious hypertrophy, the hyperplasia of the connective-tissue elements. But this is not limited to the athlete or the blacksmith, it goes on in every human being; and, as age advances, his muscular tissue is gradually replaced by the worthless connective tissue.

After a stroke of hemiplegia, it is the leg that soonest regains power; the arm later and less perfectly. This is because we must,

and do, use the leg-muscles, while we are apt to favor the arm, so that adhesions are likely to form, and we have heard these giving way as a masseur manipulated the limb. No matter how little we use our arms, we call on our leg muscles constantly; and the result is, that, as age advances, it is the legs that first weaken, the arms being compelled to aid them by the use of a cane. The resulting condition is fibrosis, hyperplasia of the sarcolemma, and atrophy of the muscle-fibers. This is the enemy we should seek to cope with.

Have we a remedy?

The nearest we have as yet is thiosinamin, which, with massage, has certainly some effect in inducing dissolution of redundant, adventitious connective tissue. Whether this can be applied here, is a matter for experimental investigation. But, even so, it does not restore the lost fibers; so that its application, to be effective, should precede the atrophy.

Nothing is worse than advice to take much exercise—this is precisely the thing that must hasten the aging-process. It is rest and conservation of the remaining muscular tissue that are indicated. Instead of long walks, let the exercise take some such form as sawing wood, which brings into action the arms, back, and especially the abdominal muscles, which latter are scarcely ever given as much work as they need.

This matter of proscribing red meats has been carried too far. Now we learn that pellagra may be ascribed to the absence from the diet of these proteins. When shall we ever learn to be moderate and sensible? that *in media tutissimus ibis*? that when we empty the bath we need not spill the baby?

Moderation in the use of nitrogenous foods is wise, and, as we lay aside the more active habits of youth, we may well limit such foods commensurately. But limitation does not signify total abstention; and common sense is a better guide than extremism.

Again we return to the admonition, to study our vegetable *materia medica* with the aid of modern methods. The detection of radioactivity in the Saratoga waters has furnished an explanation of their popularity, for which the analysis of their mineral content failed to account. The separation of hyoscine therapeutically from atropine is an advance comparable to the distinction between scarlatina and morbilli. The really scientific study of the active principles of plants has scarcely begun; and who can estimate or limit the discoveries that wait in this field?



PHOTO: UNDERWOOD AND UNDERWOOD

TEACHING WOUNDED SOLDIERS TO USE MAIMED MEMBERS

ALL KINDS OF INGENIOUS METHODS AND APPARATUS ARE EMPLOYED BY THE GERMANS TO REEDUCATE IMPAIRED MUSCLES AND CRIPPLED LIMBS. "FANCY WORK" IS FOUND OF GREAT VALUE



PHOTO: INTERNATIONAL NEWS SERVICE

RUSSIAN WOUNDED LEAVING WARSAW

DURING THE RETREAT FROM WARSAW, THOUSANDS OF WOUNDED RUSSIAN SOLDIERS WERE CARRIED TO PLACES OF SAFETY IN PEASANTS' CARTS OR OTHER EXTEMPOORIZATED VEHICLES, AS SHOWN HERE

Leading Articles

What We May Learn from the Great War

By Ira S. WILE, M. D., New York City

Editor of "The Medical Review of Reviews"

EDITORIAL NOTE.—All eyes are turned to the East. Even in prosperous, contented, war-free America, we realize that the world is undergoing a great change, the meaning of which we cannot yet understand. In the unfolding of this great drama of the nations, physicians are more interested than most classes of people. Because this is so, we believe that every reader of "Clinical Medicine" will find stimulus in Doctor Wile's splendid interpretation of the meaning of the great struggle.

THE uneven veneer of civilization is badly cracked. Through warps and strains one may see the coarse grain of the props of European society. Beneath the gloss of literature, art, sculpture, painting, education, and industrial development is revealed man, in all his primal strength and glory. The physical attributes of mankind stand resplendent beyond the control of the restraining forces making for mental and moral development.

The goal of mankind has not been determined. Shall we learn through this war lessons that, pragmatically speaking, are to make for the betterment of mankind? The role of the prophet is less certain in its meaning than the martial roll of drums. The vigorous onslaughts of personal combat in the name of God, that glorified soldiers of the Middle Ages, have paled into insignificance in the light of the mass destruction characteristic of the man-made war now desolating sixteen nations. The brawn and brutality of the cave man has been intensified in the destructive forces working in this prolonged campaign of devastation. The saber, the bayonet, the sword, and the lance are secondary instrumentalities of war compared with the machine-guns, shells, and shrapnel.

The obsolescent cavalry and infantry warred on the earth. The lessons of this modern war must be sought in the deadly submarine, in the graceful and incendiary Zeppelins and armed aeroplanes and in the subterranean activities in the trenches. The ballista and battering-ram appear trivial devices now that cordite, melinite, and lyddite shriek through the air in their merciless journey. The Human Harvest, as David Starr Jordan terms it, is being reaped by the irritating, strangling, fear-inspiring chemicals sweeping over the land in a pestilential cloud.

No longer is the mailed hand bearing the deadliest weapon. Man's brain has raised to the *n*th power the death-dealing devices that make this European war a profound lesson in an infernal catastrophe such as non-combatants far removed from the scenes of strife are unable to grasp, contemplate or understand.

Gone are the wars of individuals. Gone are the chivalry and glamor of mortal combat. Chemistry, physics, geometry, trigonometry, and abstract science have come into their own. The slaying of thousands is the keynote of modern warfare. With military ravages on a colossal scale, with violent devastation, with indefensible destruction, with purposeful cruelties, the military mind conceives the majesty of the triumphal procession of the martial Moloch.

Future wars may devise means of defense against the soul-searing elements now employed. Science and invention, hand in hand, will create more powerful machinery, more deadly missiles and more forms of offense.

Can we learn the lesson of peace from the ashes of Louvain, the bombardment of Freiburg or London? Are songbirds or vultures to be seen on the battlefields of France, Servia, Russia, Austria, and Turkey? Has the horror of war actually horrified? May we learn to think in terms of peacefulness and brotherly love while those bound together by ties of race, religion, and tradition seek to destroy one another? Can terms of peace pervade our sleeping or waking hours, while Teuton, Celt, Slav., Jew, Protestant and Catholic forget their traditions in a storm of passion? Is it true that the dawn of peace is to be made possible by the flood of human blood that has reddened the earth and will nourish the crops for future generations? Some pacifists with a military perspective

would have us learn that the way towards getting peace is through the creation of more horrible and more destructive agencies of war. If it be true that we may learn the ways of peace through the emotional violence resultant from ghastly warfare, with all its goriness and devitalization, it will not have been waged in vain.

In so far as the world is concerned, outside of the commercial advantage to the United States and the crystallization of national feeling into some definite form, the sixteen months of warfare have not redounded to the internal improvement of any nation, nor have we learned anything of paramount importance for the upbuilding of the future race. We have learned that war does indeed bring desolation. It clogs the wheels of social progress. It retards the development of the fine arts. It places obstacles in the way of industrial progress. It militates against scientific investigation and research. It is unpropitious for ethical development and opposes the rational development of civilizing agencies. We are taught in no uncertain way that the peaceful quasi-combative strife in the interests of humanity is fraught with events of greater significance than can possibly be attained through demonstrations of military prowess or naval force.

Surgery Has Learned Little in This War

What have our surgeons learned? Practically no new surgical procedures have been devised save for minor technic in connection with the type of wounds that shells and shrapnel have made so plentiful. We have learned that our modern surgery, with the splendid asepsis of peace, has failed in the face of military exigencies. According to Asquith, the mortality rate among the wounded has

been 24 percent. Despite the lack of sanitation during the Crimean war, the mortality of the wounded was only 22 percent, while in the Franco-Prussian war the mortality among the German soldiers was but little over 17 percent.

Aseptic surgery has been practically valueless and impossible.

The problems of antiseptic surgery have created more discussion than at any time since the controversies over the pioneer experiments of Lister. Trench warfare means suppurating wounds. Carbolic acid has again come into its own as an antiseptic, even as it has blossomed forth in its state of nitration as destructive picric acid. We have learned more about resisting attacks made with chlorine, bromine, and phosphorus than about withstanding and overcoming that rarity in peace, "gas gangrene."

In fact, in the realm of surgery, we have learned but

little save the corroborative testimony that compound fractures must be conservatively treated and that antitetanic serum is more valuable as a prophylactic than as a curative agent.

To be sure, surgery is not to be blamed for these shortcomings, but rather the negligent, life-disregarding, barbaric custom of permitting the wounded to lie unrescued on the fields of battle until days have passed, or they have dragged their battle-worn bodies to first-aid havens, or some valiant comrade in his temerity has braved the snipers and effected a rescue.

What Has Been Learned in Medicine and Hygiene?

What has medicine learned beyond the fact that oil of chenopodium may be utilized as a substitute for thymol in the treatment of



PHOTO: UNDERWOOD & UNDERWOOD

DR. RICHARD P. STRONG AND DR. EDWARD RYAN

Doctor Strong is the American who "cleaned up" Serbia. He was sent to that country by the American Red Cross to rid it of typhus, and with his efficient American staff he succeeded wonderfully. Doctor Ryan was head of the splendid American Hospital in Belgrade.



PHOTO: INTERNATIONAL NEWS SERVICE

DR. JAN TUR, IN A RUSSIAN HOSPITAL IN VILNA

THE "HOSPITAL" IS NORMALLY A GIRLS' COLLEGE, BUT, LIKE MOST SUCH INSTITUTIONS, HAS BEEN TURNED OVER TO THE SICK AND WOUNDED

uncinariasis? Practically no great medical advance has been announced. The greatest lesson of this war has been the effectiveness of our modern methods of vaccine therapy. Anticholera inoculations, antityphoid vaccination, antityphus treatment have taken their place in the realm of military prophylaxis along with the routine usefulness of true vaccination, as demonstrated in the Franco-Prussian war.

We have learned to trust and have faith in our medical achievements of the past. We have learned to be thankful for the masterly visioned scientific spirits that create these marvelous agencies for the conservation of life which are no less effective amid the stenches and trenches of warfare.

Military hygiene has given us numerous lessons which may be applicable to modern life in times of peace. If huge portable equipments for the maintenance of a pure-water supply are available in war, why may they not be utilized in times of peace, particularly in rural communities, for the prevention of typhoid fever, cholera, and dysentery? If it has been possible to provide

adequate laundries and disinfection plants almost at the battle-line, why cannot sanitarians take advantage of these instrumentalities for improving the hygiene and sanitation in the congested sections in our country?

We have learned anew the conserving influences of modern sanitation and hygiene. It has stood the test far better than had been hoped for, though far from perfection owing to the unfortunate conditions in which its work necessarily had to be accomplished. We have learned again the inherent hazards of vermin and the larger insects, and have found that the fight against lice, flies, mosquitoes, and other blood-thirsty allies of Mars, is worth more thought and an increased expenditure of funds.

In Sociology We Have Learned Much

In social science, valuable lessons are available. Sophocles wisely stated: "War loves to seek its victims in the young." Not alone has the youth of Europe suffered in adolescence and maturity, but the unborn will reflect the results of the debilitating strife.

Nations are learning a bitter lesson with reference to their greatest national asset—children. That belligerents have learned their lesson and are realizing the immediate importance of taking steps for the protection of their unborn citizens is evidenced by the elaborate constructive policies now being urged in Germany and England. Nations are interested in promoting the welfare of mothers, encouraging pregnancy by maternity pensions, and are solicitous about welfare-work to offset the diminution of the birth-rate.

The German Society for Bevoelkerungspolitik, and the English society known as the Central Committee for the National Patriotic Organization, are seeking to effect practical economies in human life, leading to the rapid repopulation of their respective countries. The fight against neomalthusianism is just beginning. While in this country the movement for birth control and the limitation of offspring is gaining force on ethical and civic grounds, abroad there is growing an intense desire for children—more children.

We, too, can learn our lesson as to the value of human life. Breeding human derelicts is not to be the basis of our appeal. Military sacrifice is not to be set forth as the ideal to encourage maternity. We must revalue childhood, and question, not alone its purpose, but also our interest in the development of workers, professional men, artisans, and artists who are to help in developing and following the destinies of our country.

Paternalism, Alcoholism, Eugenics

Regardless of the form of political organization, whether republican, monarchical or autocratic, to some degree this war will teach the effectiveness of paternalism. The human derelicts and social wrecks of the belligerent countries, the widows, the orphans, the refugees, the crippled, the blind, the prostrated, and the paupers have become national charges. With personal and national bankruptcy impending or existent, the difficulties of a nation-wide restoration to familial independence presents countless problems.

In its social propaganda and practices, the United States has been and is behind the social-economic standards of the principal contending nations. Possibly we may learn the importance of evaluating the social benefits of some of the existing institutions which form the nucleus for reconstructive policies abroad. We can learn much regarding health insurance, workmen's compensation acts, old-age pensions, and similar institutions that

have scarcely begun to be appreciated in this country.

The crusaders' march in favor of temperance rather than prohibition will be added to, if we can but accept the implied meaning of the restrictions placed upon alcohol among the warring nations. A rational solution of the alcohol problem may be sought and found without the disorganization of society and with manifold advantages to our national life.

Much has been hinted at or expressed with reference to the racial deterioration consequent upon the destruction of so numerous a proportion of the vigorous, alert, and mentally balanced soldiers. It is difficult to prejudge the eugenic consequences, but probably no one will gainsay that the forces of war are dysgenic in action. Time alone will disclose the valuable lesson that is to be taught, but there will be ample opportunity for the study and investigation by those interested in the development of superman.

The Place of Woman in National Life

Politically, we have learned little of the relative advantages or disadvantages of different types of political organization. Absolute monarchies, constitutional monarchies, and republics have each revealed their weaknesses. Regardless of the inherent social, economic, and political characteristics of the belligerent nations, one truth has shone out with particular brightness. The place of women in national life has grown in importance. In civil, industrial, and political life they have been called into action. They are being sought to support their governments, not as non-participants in national affairs, but as part of the backbone of the citizenry.

Man's war is making history for women. Not only have they borne with fortitude and sad, impotent pride the anxieties, sorrows, griefs, and despairs incident to giving up husbands, sons, and fathers to the crushing Juggernaut, but they have rallied to their countries' defense by carrying on its industries and promoting its civil welfare. We have learned in countless ways their strength, their power, their potentialities for national development. May we not recognize therein a new and potent reason for granting them active participation in government?

Even the women's peace congress, an event viewed by many as foolish in the extreme and offering no promise of international good, served for the first time to place a little leaven in national councils, the growth of which has



PHOTO: INTERNATIONAL NEWS SERVICE

WORK FOR WOUNDED SOLDIERS

SIMPLE TASKS ARE GIVEN TO KEEP MINDS BUSY AND ENCOURAGE SKILL OF HAND

been noticeable, so that today a peace idea appears to be struggling for existence in every corner of the globe.

The large number of physicians who volunteered for military life created a dearth of practitioners to attend to the needs of non-combatants. Herein, we have again learned that women physicians are capable, conscientious, and long suffering in performing their medical duties, even though some have sought to indicate that the medico-social sphere of activity is the one for which they are best fitted.

New Opportunities for Physicians

Young American physicians are to have a splendid opportunity for progress and practice if they are ready to take up their habitation in foreign climes. The war has created a serious depletion of the foreign medical schools. Not alone has the professorial class given freely of its life and effort, but even the half-trained student body has plunged into the reddened maelstrom. Among the numerous medical schools of London today the only institution showing an increase of students is the London School of Medicine for Women. The over-production of physicians in the

United States may well be distributed throughout the world in order to maintain a normal balance between the medical and lay portions of the various communities.

It is obvious that educational institutions have suffered internationally. The war will leave foreign nations almost decimated of its greatest teachers. The number of students available for higher education in the arts and sciences will be greatly diminished. The first educational claims of the various nations will be for workers to rebuild the industrial and technical institutions of the country. The problem is being complicated by the necessity of many new types of institutions designed to preserve for national usefulness those now handicapped by blindness, deafness, mental infirmity, or physical disability. From these numerous educational experiments now in course of progress we shall derive many new ideas. By familiarizing ourselves with the details of the new forms of practical instruction devised for the re-education of the handicapped, we shall gain a vast amount of knowledge applicable in our own educational institutions. Our knowledge of methods will be enhanced, the possibilities of our curricula will be enriched, and

the modern public-school system should be wholesomely benefited.

Can We Hope for Universal Brotherhood?

It is not beyond human power to conceive of a time when "nation shall not lift up sword against nation, neither shall they learn war any more." To accomplish this end, a tremendous ethical advance is necessary. It is difficult to believe that with the intensification of racial hatreds under emotional stress, with lowered ethical standards because of prolonged brutalizing influences, an era of brotherhood is soon to be inaugurated. It is true that the solidarity of this country has been developed since the Civil War, but it took almost fifty years to unify the earlier warring factions. The Civil War, however, took place between two sections of the same country, growing up with the same tongue, and the same religious and historical traditions.

With the commercial aspects of the present struggle as an impelling force, and with the various national characteristics suffering under the strain, it will be no small task for nations to grasp again the importance of spiritualizing life. The desecration of ethics is a concomitant of all warfare. From each tragic drama, however, the audience carries new sensations of awakened lofty emotions.

Inasmuch as the great neutral nation has found that it can no longer, in spirit, be free from foreign entanglement, but that its prosperity and internal development is necessarily bound up in the welfare of all other nations, there is some hope that we shall appreciatively foster a spirit of internationalism that will promote universal brotherhood.

By some, war is regarded as a biological process. They see, in it, unrelentless Fate controlling, through cruel processes, the destinies of the world. The aggressive, combative types are to be eliminated through warfare and a non-combative race is to be developed biologically. In addition to the death of the strongest physical types, they foresee the racial deterioration of developing nations so that unethical war may result in the creation of an unwarlike people, ethically non-believers in warfare. This plan of "reversed selection," in the words of Saleebey, may give food for thought, though it calls forth many questions as to the possibility of ethical improvement as one of war's heritages.

The unhappy, discouraging thought that must appeal to everyone is that civilization has not civilized unless we regard war as one of the desirable achievements of civilization.

Crile, in his discussion of "A Mechanistic View of War and Peace," wisely notes that our present system of education does not prevent war. Commercial relations, treaties, debt, bankruptcy, poverty, religion, military systems, hunger, fear of wounds and death are insufficient active forces to preclude war. It is patent that some fundamental error exists in our institutions of educational and social training. If it be essential, as Crile suggests, that war patterns of action must give way to peace patterns of action, in order that a dominating thought of peace may integrally pervade mankind, there arises a subject of paramount importance to be investigated, studied, organized, and applied by pacifists.

"There Never Was a Good War or a Bad Peace"

The most vital lesson that we can learn is the thought of Benjamin Franklin, "There never was a good war or a bad peace." There may have been holy wars, there may have been commercial wars, there may have been wars for national honor or national integrity, but the sum total of accomplishments for the benefit of the human race are such that it is doubtful if the world's progress has been due largely to this destructive element.

It is possible to conceive that in the evolution of mankind war was an essential step. For many years, vicious, ruthless competition in industrial life was justified as the very basis of commercial prosperity. Today, however, cooperation, coordination of activities and concerted action, appear to be the dominant note among the wisest industrial organizers. With the ever-increasing population of the earth, we are confronted with countless difficulties which are being solved on the principle of cooperation and mutual understanding.

Must this lesson lose its force when applied to the larger problems of *Welt-politik*?

Cannot this country optimistically take the lead in fostering a new spirit of international comity, based upon the doctrine of the brotherhood of man?

Cannot some spiritualizing forces be evolved that will slowly gather strength and become diffused throughout the nations of the world, so that all mankind may join in a thanksgiving chorus? Then we shall hasten the realization of the hope expressed by Tennyson:

Ring out old shapes of foul disease,
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.

The Prostate Gland: Its Diseases and Disorders

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide" and of "The American Journal of Urology and Sexology"; author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhœa and Its Complications"; "Never-Told Tales," etc.

EDITORIAL NOTE.—Doctor Robinson has promised us a series of articles upon "The Diseases of the Prostate Gland." This is the first of the series, one which deals with a common, everyday disease with which every physician must be familiar, in the trenchant style and the practical manner so characteristic of everything written by Doctor Robinson. This series will be continued for several months.

AN ABNORMAL prostate gland may cause disturbances in the urinary tract, in the sexual sphere, and in the nervous system. The disturbances caused in the urinary sphere have been pretty thoroughly worked out and are well described in special treatises. Much less has been done in the study of the sexual disturbances caused by a disordered prostate gland, and very, very little—at least very little that is of any value—has been done in working out the general nervous and psychic disturbances caused by an abnormal or diseased prostate.

The field of nervous and psychic symptom-complexes that have their origin in the prostate gland has hardly been tilled as yet, but I can assure my readers that it would offer a rich harvest to any intelligent physician who would make a special study of the subject. The manifestations of a diseased prostate are so protean and may be so remote that to him who has not made a study of them the assumption of a causal connection may seem a far-fetched one; yet, he who has had a wide practical experience in genitourinary and sexual disorders and has given the matter special attention entertains no doubt of such a relationship.

Before proceeding with the systematic exposition of the diseases and disorders of the prostate, it will be well to report briefly a few cases of prostatic origin. In some of these patients, the connection with the prostate was not suspected for a long time.

Pruritus Ani the Dominant Symptom

Case I. Patient, aged 44, married, has two children, never had any venereal disease. For the last nine months, he has been suffering severely from pruritus ani. He has been treated by three different physicians and has used a large variety of ointments and lotions, all affording but temporary relief. The only treatment that seemed to give relief lasting for any length of time was the thorough application of carbolic acid followed by a thorough swabbing with alcohol. Another treatment that gave him relief, but also of only

a temporary character, was, to apply compresses wrung out of water as hot as could be borne. He also received x-ray treatments, but without any benefit. Then I was requested to suggest a remedy, and I advised my favorite in all instances of pruritus ani, namely, painting with a 10-percent solution of silver nitrate. This accomplishes a cure in the vast majority of such cases, but in this instance the relief afforded was but slight and also only temporary.

An examination of the rectum disclosed a uniformly enlarged prostate gland of rather soft texture, but having a hard nodule here and there. Prostatic massage, three times a week, instituted thereupon, accomplished a complete cure in three weeks. The only other treatment given in conjunction with the massage was a hot sitz bath every night. This was ordered both for its influence upon the pruritus and its direct influence upon the prostate.

That an enlarged or congested prostate gland may cause severe and protracted pruritus ani is well established, but this fact is known to only a few of the medical profession, and I have known many cases of pruritus ani being treated with innumerable applications and ointments, without even an attempt being made to examine the prostate. It would be well for every physician to bear this connection in mind and in intractable cases of pruritus ani to examine the prostate and to administer prostatic massage even if the gland is apparently normal.

A Case of "Lumbago"

Case 2. Mechanic, 30 years of age, single, no venereal history, excellent appetite, bowels regular, generally in good health. For the past eight months, he has been suffering off and on with "lumbago." The onset was gradual, but he thought it might have been due to contracting a cold or perhaps to overstrain at his work. He had used various liniments and ointments, took a number of Turkish baths, and finally had been given sodium salicylate, acetylsalicylic acid, and

even atophan. All these remedies remained without the slightest effect.

A rectal examination disclosed a somewhat enlarged prostate gland, but so extremely sensitive throughout, that, in spite of his robust health, the patient, when examined, fainted away and if not supported would have dropped to the ground. Hot rectal irrigations were ordered to be made twice a day, followed by a suppository of iodoform, morphine and atropine. After ten days of this treatment, prostatic massage was instituted, which the patient bore better and better with each treatment; after two weeks of this treatment, the prostate was practically normal and the "lumbago" was completely gone.

Loss of Sexual Power

Case 3. Lawyer, aged 36, married ten years, has had no venereal disease, in good health in every respect. For the last two years, he has been noticing a gradual weakening of his sexual power, with respect to ejaculation. There was no difficulty whatever about the erections, but the ejaculation-time had been getting gradually shorter, until during the last month or two the ejaculations had occurred almost precipitately, *ante intromissionem*.

Examination disclosed a soft, boggy prostate gland, and on gentle expression a large quantity of prostatic secretion readily exuded. Prostatic treatment, consisting in massage and alternate hot and cold rectal irrigations, resulted in a complete cure in four months. The only other treatment given consisted of instillations of silver-nitrate solution into the prostatic urethra with a Guyon syringe, repeated once a week for the first four weeks. As endoscopic examination revealed a normal condition of the prostatic urethra, these instillations were discontinued.

Sciatica Resulting From Prostatic Trouble

Case 4. A number of cases of sciatica, as the result either of prostatic disease or of too strenuous prostatic massage, have been reported. I have had only one such case. This patient had been subjected to various kinds of treatments. Galvanocautery along the sciatic nerve was applied, numerous ointments containing salicylic acid, oil of wintergreen, oil of mustard, and the like, were rubbed in, and quinine and urea hydrochloride was injected. Relief was obtained, but only temporarily.

An examination of the prostate gland revealed several hard and extremely painful

spots in its left lobe. The right lobe was practically normal. Treatment, consisting of massage of the left lobe, and hot irrigations followed by ichthyl and iodoform suppositories, resulted in a complete cure of the sciatica; and it has not returned for now five years.

A Case of Priapism

Case 5. Patient, aged fifty, has had gonorrhea at three different times, at the ages of eighteen, twenty-five, and thirty-eight years. He had evidently been cured completely, for, during the last twelve years he has had no symptoms of any kind and the urine has been clear, containing no shreds whatever. He is sexually normal, but for the last ten or twelve months he had been annoyed by attacks of priapism when asleep at night. These attacks would awake him, and various methods tried by him, such as walking on a cold floor or dipping the organ in cold water, relieved him only occasionally. Intercourse at such times also was without any effect, the state of priapism remaining practically the same as before coition. Bromides, which he used in very large quantities, on the advice of a local physician, produced no other effect except upsetting his stomach and cause a disagreeable acne on his back and the back of the neck.

The prostate was found enormously enlarged, but only little secretion could be expressed. Treatment directed to the prostate and consisting in massage, hot and cold irrigations, and introduction of iodoform suppositories, resulted in a practically complete cure within a period of three and one-half months.

A Psychic Effect of Prostatic Disease

Case 6. This case is of extreme interest, perhaps as interesting as any I have to report; for, the trouble caused by the prostate gland not only was of a physical character, but seemed to produce a complete change in the patient's psyche.

The patient was forty-six years old and occupied a prominent position in the business world. He was a model citizen and a model husband. His sexual life was as nearly normal as we could find in our modern "civilized" state of society. He never had any venereal disease, had masturbated but moderately and then only for a short time while he was a boy, was married at the age of twenty-four, and lived a normal, moderate life. He practiced neither excessive venery nor undue continence. About two years

previous to my seeing him, he noticed an increase in his libido. While previously he would indulge once a week or once in ten days, he began now to indulge two, three, four times a week. He didn't think there was anything wrong about this, ascribing this increased libido to his better health; but the condition was getting gradually worse, until he began to indulge nightly, and eventually several times during the night. His health began to suffer, he began to feel dull and no longer could attend to his business properly. The demands of his libido, however, were so insistent that he felt he had to satisfy them. The indulgence would give him no satisfaction, but, still, he could not exert sufficient will-power to abstain. Finally he began to look for extramarital adventures, something he had not done previously during the entire twenty years' period of married life. His running after women was becoming notorious; the fact became known to his

wife and his business associates, and, though he felt his position keenly, and suffered much from the consciousness of the grief that he was causing his wife, he could not constrain himself. Things were getting scandalous.

I had a number of similar cases to treat and it was not difficult to arrive at the etiologic factor of this patient's change of conduct. His prostate gland was found to be enlarged, congested, and it felt hot and throbbing; the man, however, complained of no objective symptoms relating to the prostate gland. Daily massage of the gland, in connection with cold rectal irrigations, resulted in immediate improvement. Adjuvant treatment consisted in cold baths and in giving large doses of the combined bromides. The man still comes occasionally for treatment, but the life he leads is as normal as it was in previous years.

[*To be continued.*]

Experiences with Bacterins in Cases of Acne Vulgaris

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IN THIS paper I shall attempt to record my experiences with the use of bacterins, and such additional remedial measures as were necessary, in a number of cases that were referred to me after the usual method of simple bacterination had failed to produce results. I shall attempt to eliminate all cases that seem to belong to similar types, and I trust that the results here reported may assist others in the practical solution of like cases as they are being met in daily practice. The cases were selected as representative types and the actual procedures instituted in their treatment will be recorded. Incidentally, a certain amount of theorizing will be hazarded as to the probable reasons for the initial failures.

Most of the patients were referred by other physicians, owing to unsatisfactory results from bacterination, and I am venturing to account for the seeming large percentage of primary failures. The essential idea, however, is, to show that in suitable cases, by careful regulation and close attention to the patient, combined with a thorough study of the clinical condition (irrespective of the particular infection), results from bacterination are generally satisfactory.

One of the most common pathological conditions that the physician is called upon to treat, and one in which medicinal measures have not been at all encouraging, is acne vulgaris. When bacterination was first proposed for this disorder, it was heralded as a cure-all, and the excellent results reported by a number of observers have led a great many physicians to use bacterins in these cases—sometimes with excellent results, but many times falling far short of what was expected. Consequently, depending upon whether the physician primarily had good results or the reverse, he praised the bacterin-therapy or condemned it.

My experience as a bacteriologist, in examining these cases of acne, leads me to believe that it is exceedingly rare to meet a pure infection with the bacillus acne, if pustules are present. *Staphylococci* (either *staphylococcus albus* or the *staphylococcus epidermidis albus*, or, as some bacteriologists claim, the *diplococcus of acne*) are practically always present—rarely *staphylococcus aureus*.

Most manufacturers supply so-called staphylo-acne bacterins, and these should be used in preference to simple acne-bacterins. The usual dose contains from 5 to 10 million

acne-bacilli and from 100 to 200 million staphylococci. These stock bacterins, in many cases, elicit a very favorable response; but often, if the physician depends upon bacterins alone, failure results, as is shown by the following cases.

Acne Depended Upon Intestinal Condition

Case 101. R. J., age eighteen. Mild but persistent pustular acne, involving especially nose, chin, and neck. Very few large comedones on back, many on face. Pustular lesions showed diplococcus of acne only, no acne-bacilli being demonstrable except in the comedones on the back. As a result of a series of stock staphylo-acne injections, this patient apparently recovered. Both physician and patient were very much pleased with the result.

Six weeks after discontinuance of the injections, there was a relapse and there appeared a large number of pustular lesions about the chin and neck. A further course of stock staphylo-acne bacterins did not seem to help as much as did the previous course, the condition did not clear up as well as the first time, further relapses occurred, and the patient continued to have suppurative lesions after the second course of injections was given up, which he did owing to the unsatisfactory progress of the disease. He again suffered a relapse, and his ultimate condition was even worse than before the bacterin-treatment was instituted.

Upon questioning the patient, I found that, following a change of his boarding-place and of occupation from outdoor carpenter-work to inside work at a machine, he was suffering from constipation. At the time I saw him, his bowels had not moved for three days. He also informed me that he had discontinued the diet prescribed by his physician. This, he said, was particularly due to changing his boarding place, for he was unable now to select his food as he had previously done. Urinalysis showed a high acidity (85,000 units); there was much indican present.

This patient was again referred to his family physician, and a thorough course of cathartics and alkalis was suggested, and instituted, with a low protein diet and staphylo-acne bacterins. The result was that the acne entirely cleared up. There was no relapse for some three months, when he went camping in the woods with several other young men, and then, following dietetic indiscretions (they doing their own cooking), a third relapse occurred. This outbreak, however, did not require the use of bacterins and

cleared up readily after he was advised by his family physician to return to a low protein diet. It is evident that the gastrointestinal condition in this case was the direct exciting factor in the relapses.

Comedones Must Be Evacuated

Case 41. Young lady, ag: 28, has had pustular acne for eight years. During this time treatment had been persisted in, though somewhat irregularly—medicinal, mechanical, and electrical—but apparently without satisfactory results. Then followed a course of bacterin-treatment. In all, twenty-five injections were given during a period of six months, with but slight improvement. It is true that the lesions were fewer, but there still remained many old scars and large, congested, indurated hyperemic areas. These were very disfiguring. They rarely pointed or came to a head, but seemed to retrogress and then again, after a period of latency, become active.

Examination disclosed a marked secondary anemia (erythrocytes, 3,500,000; hemoglobin, 68 percent; color-index, 0.9; leukocytes, 10,000). The urine contained a trace of albumin, 65 Grams of total solids, and 18 Grams of urea. There were no casts. For the anemia, iron and arsenic with nuclein were administered hypodermically; boldine, 1-32 grain three times daily; and a mild laxative was continuously administered, sufficient to produce two thorough movements per day.

This treatment was combined with local massage; hot wet-packs each morning. All comedones were removed once a week, and as many of the indurated lesions as possible without producing too much "disfigurement" (as the young lady expressed it) were opened.

These deep-seated indurated lesions that did not tend to point are characteristic of many cases of acne. If they are incised and the incision is carried deep enough, pus will be found; and careful examination of the pus will show that there is always present a comedo. This comedo is not in communication with the surface. The lesions are very deep—one-fourth of an inch or more beneath the surface. They are very hard and firm to the touch, indicating a marked induration surrounded by an area of congestion, and show as slightly elevated red blotches upon the face. These lesions tend to retrogress to some extent, absorption frequently taking place without the pus being discharged externally; but the irritating comedo, that remains, is a foreign body, and sooner or later will again set up purulent inflammation as the patient's gen-

eral health and resistance falls. It is absolutely necessary that these lesions be deeply incised and the comedo and purulent contents removed.

It has been my custom to use an iridectomy-lancet or a needle for incising these pustules. In addition, ammoniated-mercury ointment, half strength, was applied each night, and again thoroughly removed with soap and hot water in the morning. A diet consisting largely of fruits and vegetables, combined with the liberal use of buttermilk, was advised. Stock staphylo-acne bacterins were given, beginning with 10 million acne-bacilli, which was increased to 50 million, a dose being given seventy-two hours after the reaction of the previous dose had subsided.

The hyperemia and indurated lesions showed a marked improvement within three weeks and after four months the patient was discharged, as no evidence of acute inflammation was to be noted. There were, however, many scars showing some evidence of induration and congestion. There was no evidence of active disease. At that time the albumin had entirely disappeared from the urine; total solids amounted to 70 Grams; urea, 30 Grams per day; erythrocytes increased to 4,350,000; hemoglobin, 88 percent; color-index, approximately 1.0; leukocytes, increased to 14,000.

This patient has been seen lately (some nine months after this treatment) and there has been no return, no evidence of active disease. There is some further slight improvement of the induration and congestion, but the scars and pits necessarily will always remain. I believe that the medicinal and surgical treatment, in addition to the bacterins, were the essentials in this case.

Slight Recurrences a Feature of This Case

Case 97. R. E., male, age 26. Severe pustular acne on the face, especially on the forehead; many large comedones. Trouble of seven years' standing. This patient had had the pustules incised and comedones removed, and was put on a low protein diet. Hot fomentations had been applied each evening; sodium citrate, 30 grains, a day, was given combined with laxatives, and stock staphylo-acne bacterins every seven days. There was a slight improvement after the third week, but this did not continue. Thereafter bacterins were given every fourth day, but no apparent improvement was observed at the end of three months, when, as a result of the patient acquiring paratyphoid fever, he came under my care.

The paratyphoid fever was of a mild type and was differentiated and diagnosed by blood-culture. Stock staphylo-acne bacterins were advised and given during the entire course of the fever, in combination with an autogenous paratyphoid bacterin. The fever lasted two and one-half weeks. During convalescence, the staphylo-acne bacterins were continued, but the dosage was rapidly increased, with excellent results. Six weeks after beginning with the increased dosage, the face was practically clear.

This patient received at his last injection 110,000,000 acne-bacilli and 1,000,000,000 staphylococcus albus. Whether the diet or the intercurrent paratyphoid fever or the rapidly increased dosage or rest in bed, or all these factors combined, resulted in clearing up this case, I am unable to say, although I believe that we were justified in rapidly increasing the dosage, owing to the fact that the previous treatment, in which this dosage had not been reached, produced only temporary results.

Case 64. Young man, age 19. Severe pustular acne of face, neck, and back; many large comedones, deep indurated pustules. This patient received stock staphylo-acne bacterins for a period of eight months, no other treatment being given. The first few doses apparently produced some benefit; thereafter no change was noted. He was sent to me for an autogenous bacterin. Examination of pus from one of the deep, indurated lesions demonstrated the presence of the staphylococcus albus and acne-bacillus. An autogenous bacterin containing these organisms, combined with dietetic and medicinal measures, proved markedly beneficial. However, we were unable, in the last three months' treatment, to prevent occasional lesions from appearing.

In This Case, a Failure

There seems to be a periodicity about the recurrence—usually every fourth, or, sometimes, eighth week. We had carefully examined this patient's general condition, modified his diet, and even sent him to a hospital for a complete rest, and put him on a milk diet for a week. We also markedly increased the bacterin dose, in fact, to such an extent that 100,000,000 acne-bacilli and 1,000,000,000 staphylococci failed to produce a reaction, but we were still unable to prevent the appearance of a few lesions occasionally. These seemed to appear, though they rarely suppurated, whether bacterin-treatment was being given at the time or not.

Although this case has been markedly improved, we cannot state that we have produced definite results, so far as a cure is concerned, for there still are occurring aborting lesions. We are unable, so far, to determine the exact cause of these occasional slight recurrences. The infection has not changed in character, so far as we were able to determine by bacteriologic examination.

In my experience these chronic cases are very difficult to cure, while acute cases always respond promptly.

Hidden Niduses of Infection Must Be Discovered. Value of Nuclein

Case 66. Dr. J. J., age 34; pustular acne. Has received a course of bacterin-treatment from a brother physician, also has given himself three different courses of stock staphylococci bacterins. Examination of the pus showed a pure staphylococcus-aureus infection, no staphylococci albus or acne-bacilli being present.

An autogenous bacterin of staphylococci aureus rapidly relieved the condition, but a relapse occurred after several weeks. An autogenous bacterin was given, when the condition was rapidly relieved; four injections being sufficient. However, two months later, there was another relapse, still showing a staphylococcus-aureus infection. The patient now came to me, and a thorough examination revealed a chronic infection of the antrum of Highmore. Cultures showed the presence of the staphylococcus aureus, pneumobacillus of Friedlander, and streptococcus pyogenes. Several of the teeth, as shown by x-ray examination, had been improperly filled, as a result of which blind abscesses in the upper jaw had formed.

Surgical measures directed to the drainage of the antrum and alveolar abscess, with further bacterin-treatment, were instituted. A bacterin containing pneumobacillus of Friedlander, staphylococcus aureus, and streptococcus pyogenes were given. Since this time the Doctor has completely recovered, has had no relapse, and has markedly improved in health, having gained over 22 pounds in weight.

It is evident in this case that several things were originally at fault. In the first place, the constant source of infection was not located, the source, namely, the alveolar abscesses and infected antrum being overlooked. Consequently, the proper bacterin was not given at first; the patient did not have a staphylococcus-albus and bacillus-acne infection, but a staphylococcus-aureus infec-

tion, this producing pustular acne; which was only one of the manifestations of his disease.

Furunculosis Added to the Acne

This case is very similar to another one, in which the young man was found to have a staphylococcus-aureus infection, which produced pustular acne and at times a furunculosis, involving particularly the neck on the left side. This furunculosis was supposed to have been due to irritation caused by his collar, and affected the left side—the young man sat at a desk and frequently turned his head to the left in order to refer to a ledger.

A stock staphylo-acne bacterin had been used for three months, without apparently influencing the disease more than to a very slight extent. Exercise, proper diet, and local massage had also been instituted, but the disorder continued to progress. Examination of the pus from a furuncle showed a pure staphylococcus-aureus infection. There were staphylococci albus and aureus in the acne lesions on the face; no acne-bacilli could, however, be demonstrated. An autogenous bacterin was prepared and was given, in increasing doses, for a period of nine weeks, without marked benefit. The physician then brought the patient to me again, when I made a blood examination.

Notwithstanding the fact that he had a purulent infection and had been given a staphylococcus bacterin, the leukocyte count was under 8000 per cm.; red blood-corpuscles, 4,600,000; hemoglobin, 98 percent. He did not have a very severe anemia, notwithstanding his long-continued local staphylococcus infection. The man refused further bacterin-treatment, but insisted that something be done for him; in fact, as he expressed it, he was "disgusted" with this method of treatment.

Nuclein Contributes to Success

I then advised the use of nuclein, and, knowing the patient to be somewhat erratic and not easy of control, I advised the doctor to give him 2 Cc. of Lundvall's solution (a 10-percent solution of nuclein) subcutaneously (abdomen). The physician did so, and two hours later I was called, as the man, as he expressed it, was in "agony" and had had a chill. There was no temperature at the time, but he suffered severe pain, much more severe than is usually produced by nuclein injections, although these are always somewhat painful. Hypodermatic injections of quinine and urea hydrochloride, combined with the

application of compresses of magnesium-sulfate solution to the site of injection, resulted in quieting the patient and relieving the pain.

He refused further treatment, but returned to his family physician some weeks later, at which time it was found that the pustules on the face and lesions on the neck had entirely disappeared. He has had no relapse in the fourteen months which have passed since he received this nuclein solution. Unfortunately, blood examination was not made after Lundvall's solution had been used.

The Lundvall solution was used, because we know definitely that nuclein given hypodermically will increase the number of leukocytes, and this patient had leukopenia. Immunity depends upon the presence of leukocytes. In all cases that recover from pyogenic infections, there is a leukocytosis. In view of the fact that the disease cleared up so rapidly after this injection, and knowing the action of nuclein, I believe that we are justified in attributing the cure, at least in a measure, to the use of the nuclein solution.

What Bacterination Seems to Teach

As a result of my experience with bacterination in cases of acne, it occurs to me that the following facts should always be borne in mind:

In all of these cases there is some underlying pathologic condition which reduces the general vitality or resistance of the patient to an extent sufficient to prevent recovery from the acne infection. While in many of these cases this condition is but slight and a moderate stimulation, such as can be produced by the use of staphylo-acne bacterins, alone is sufficient to cause the patient to recover, owing to the fact that he is not overwhelmed by some other pathologic condition, his cells are capable of reacting to the stimulation produced by the bacterins. But in all cases it is essential to treat the patient as an entity, irrespective of the fact that he has acne vulgaris, and to determine, if possible, from what other pathologic condition or functional derangement he may be suffering and as a result of which he does not entirely recover from his acne, either naturally or from simple bacterination.

Again, we should keep in mind that, while bacterin-medication always produces a leukocytosis, and the leukocytes are absolutely essential to recovery, there are certain cases in which this leukocytic response does not occur. Indeed, I am certain that, if we made

leukocyte counts in all of these cases, we should find a large number that do not properly react, so far as leukocytosis is concerned, to bacterin injections.

These patients must receive additional stimulation. This may be obtained by means of salicylic acid, pilocarpine or nuclein. In my hands, the best results have been obtained with nuclein. Further, the injection of a bacterin, provided the patient's cells are capable of reacting to the stimulant thus introduced, results in the production of *specific* antibodies. Therefore, it is absolutely essential that the proper bacterin be given. This explains many cases that are benefited by autogenous vaccines after the failure of stock vaccines.

Points About Staphylo-Bacterins

For the staphylococci, there is not a marked differentiation, a staphylococcus-aureus stock bacterin practically always giving results in staphylococcus-aureus infections and to some slight extent even in staphylococcus-albus infections; but, in the case of the streptococcus, the colon-bacillus, as also some other organisms, there are so many varieties that failure occasionally results from the stock bacterins, owing to the fact that a given stock bacterin does not contain the particular variety of organism from which the patient suffers. For example, it is possible that, in a streptococcus-viridans infection, streptococcus-pyogenes bacterins will not be as beneficial as streptococcus-viridans bacterins. This fact manufacturers of stock bacterins aim to obviate in a measure by the combining of as many diverse strains as possible—in the socalled polyvalent bacterin.

Further, bacterins are only a stimulant to the patient's cells, and, even if the patient's cells have responded by the production of antibodies, unless these antibodies can be brought into intimate contact with the infecting organisms, there will be no effect upon the disease.

Surgical measures directed to the correction of deformities and removal of foreign bodies, purulent discharges, and so on, are absolutely essential. Infected foreign bodies must be removed, otherwise the patient will not recover, irrespective of whether bacterins are used or not. All sources of irritation should be removed.

If we are aware that, when we inject bacterins, we are injecting toxin, or poison, with a view to stimulating the patient's cells to produce antitoxin, we are not at all consistent if at the same time we fail to attempt to place

the patient in the best possible condition, so that he may be able to take care of this additional poison. Many a time a physician injects bacterins into a patient whose cells are already overwhelmed by toxic bodies,

and in this way is doing actual harm—is adding fuel to the fire—is not giving the patient a fair opportunity to obtain benefit. And this I believe to be a very frequent cause of failure.

Some Remarks About Endamoeba Buccalis

By DR. KARL ELANDER, Goteborg, Sweden

HAVING made the treatment of alveolar pyorrhea a specialty for about fifteen years, it naturally was with great interest that I learned of the theory lately advanced by Barrett, according to which a species of ameba (*endamoeba buccalis*) is the cause of this affection; and now, after having studied a large number of such cases microscopically, I am very much inclined to support this view.

The probability that the ameba is, in all instances, the most prominent factor in producing alveolar pyorrhea is confirmed, not only by the unanimous opinion regarding the constant presence of this parasite in the pus-pockets around the teeth, but also by the therapeutic effect of an amebicide, notably emetine. Other circumstances pointing to the amebas as the causative factor are, for instance, that the disease progresses only in one direction, namely, apically, so that the atrophying process of the periodont proceeds gradually, and is followed by a secondary atrophy of the alveolar bone; whereas, the gingival lesion is cured spontaneously, to a certain extent, the gingival wall of the pocket acquiring an epithelial membrane of the same kind as the gum.

This proves that the disease progresses gradually toward the apex and that the lesion always is located between the border of the epithelial membrane and the sound periodont; that is to say, the exact spot where we find the amebas in any considerable number. Another proof of the fact that the disease undoubtedly is strictly located in the periodont is, that the patient's health always returns when the affected teeth are extracted. So, also, health is restored when the extracted tooth is replanted after first having been thoroughly cleaned. All writers agree that this latter procedure cures the disease, although there seem to be differences of opinion regarding the prognosis with regard to the replanted tooth. Inasmuch as both the extraction and the replantation frees the subject of pyorrhea, this result must follow because something has been removed in

either case; and that is the diseased periodont. Consequently, the latter must be the real seat of the disease.

The tendency of the disease, to advance in only one instead of extending in every direction (as, for instance, in an abscess), has an analogy in the behavior of the entameba of tropical dysentery. Regarding the latter, Hoppe-Seyler says: "The amebas intruding into the mucous membrane, produce soon, now here now there, epithelial necrosis. They seem to give off a poison which kills the cells. They then advance farther, both in the blood and the lymph, to the base of the mucosa. Great swelling and necrosis follow, forming thick knots, which afterward are destroyed and emptied into the intestine, leaving a deep ulceration."

In studying the living entameba, I have found the electric current of great assistance. The ameba we know to be rather shortlived outside the periodont, and Barrett and others, therefore, have recommended warming the saline solution and the slide to about body-temperature, so as to give the protozoon the best conditions. This is a rather difficult procedure, as the slide and the liquid will be cool in a few moments; and then the ameba, even if still living, is sluggish or motionless. I have, therefore, tried to stimulate the parasite by means of electricity, and have found that it is quite sensitive to a very weak current.

Two platinum electrodes are fixed on the table of the microscope, so that by means of a light spring they are made to press upon the slide on each side of the coverglass. The amebas are suspended in normal saline solution and a cotton pellet, moistened with the same solution, is placed on each electrode and touching the border of the coverglass. The electrodes are connected to an ordinary cataphoresis-apparatus and the current gradually turned on.

I have not observed electrotropism, but when the current amounts to more than one millampere, the formation of pseudopods

can be seen quite distinctly. If the current increases to 4 milliamperes, the amebas are killed in a short time. Their pseudopods are then retracted and the amebas assume a roundish shape, suddenly vanish. I am still studying the influence of the current on

the ameba, and shall report any further observations later on. In the meantime, I presume, it may be of interest to others studying the amebas to be apprised that the electric current is of great help in promoting the amebic movements.

Adventures of a Frontier Doctor

No. 1. THE CATTLE RUSTLERS

By CHARLES STUART MOODY, M. D., Hope, Idaho

EDITORIAL NOTE.—A frontier doctor has many unusual experiences. Doctor Moody has had his full share, and some of these he will tell you about in the story following and others to appear in succeeding issues of this magazine. No reader of "Clinical Medicine" should miss a single one of these "Adventures."

WE ARE taught and we read that mat-
ters communicated to us in profes-
sional confidence are not to be revealed except
upon the consent of the person concerned,
but I have often wondered how many times
the ends of justice have been thwarted by this
rule. One incident in my own career, which
happened many years ago, will serve as an
illustration.

Older residents of north Idaho will recall a
band of cattle rustlers that some twenty
years and more ago operated in the region
north of the Salmon River. This band was
thoroughly organized, and so bold did they
become in their raids that they did not hesi-
tate to descend upon a herd of fat cattle in
broad daylight and make way with them,
running them across the river, and concealing
them there in some out of the way canyon
until the excitement had died out; then the
brands were changed and the cattle marketed
at some railway station in eastern Oregon.

This band continued its depredations for
several years without any of its members
being apprehended; although it was an open
secret that they were under the protection of
the local authorities and that their identity
was well known to the sheriff and his men.
At last, however, their activities became so
pronounced that the cattle-men themselves
decided to take the matter in hand. To
this end, a secret meeting was held and a
patrol of "cow-punchers" was organized—
men who had a strong predisposition to shoot
first and ask all necessary questions afterward.
These men were detailed to watch the differ-
ent herds of cattle; and so secretly was the
plan carried out that neither the rustlers nor
the sheriff and his aids were cognizant of it.

In less than three weeks after the secret
patrol had been organized, the rustlers de-

sended upon a bunch of fat steers that were
just ready for the market. In the battle that
followed, one of the rustlers was badly wounded;
the band, however, managed to make its
escape in the darkness, the trail being lost
somewhere among the rocks on the banks of
the Clearwater River.

A Midnight Call

It was along toward midnight on the 24th
of October, the period of the autumn rains,
and it was raining as it can rain only along
the Clearwater when the conditions are just
right. I had gone to bed, thankful that no
ailing mortal was in need of my services on
such a night, and had fallen tranquilly
asleep, dreaming perhaps of a heavenly time
when country doctors no more will have to
roll out of their warm beds in the dead of
night, when a knock sounded on the door.
I crawled out and went to the door, but
could see no one. As I was about to close
the door again, I heard a voice out of the
darkness, saying, "Doctor, dress and come
over to your office."

I donned my clothing, threw on a raincoat
and walked over to the office, located only a
few steps away.

No one was to be seen upon my reaching
the office. I unlocked the door, stepped in-
side and made a light; then, as I turned, I
was surprised to face a man who wore a
black mask and held in his hand a large and
decidedly competent-looking revolver. Evi-
dently this unpleasant stranger had stealthily
entered the place after me. I fancied I
could see the fellow smile behind his mask at
my start of surprise upon beholding the
apparition.

"Do not be alarmed, doctor," the man
said, "no harm will befall you if you obey

orders. Get together such things as you may need to perform a surgical operation and come with me."

"Where to?" I asked.

"That you probably will never learn; but, should you ever find out, it will be better for you to keep that information to yourself."

"What if I should refuse to accompany you upon such terms?" I asked further.

"Do you think that you will refuse?" he asked.

Candidly, I did not think so. There seemed to be such a convincing air of finality about the unwavering directness of that revolver that I deemed it advisable just then to enter into the humor of the thing and to accede to the whims of the man who held it.

I hastily packed my emergency-kit the while my unbidden guest's eyes were on me and soon announced myself ready for the journey.

My guide led me to where two horses were tied beneath a tree, and one of them, I was startled to discover, was my own saddle-animal. Thus, then, the persons who required my services were, at least, acquainted with the surroundings, else the man would not have known where to find my horse and saddle. Without a word, we unleashed, mounted, and proceeded to ride down the river-trail. Presently my guide halted, produced a black silk handkerchief and said, "You now will permit yourself to be blindfolded."

A Ride With a Mask

I submitted as gracefully as possible, the mask being tied over my eyes in such manner that it was impossible for me to see. The man then took the reins of my horse and we resumed our journey.

Although my hands were free, I knew better than to attempt to remove the mask. I tried to guess the direction we were traveling, but could only tell that after an hour's ride we were ascending the steep side of a canyon, and from this I argued that we were winding up from out of the river-bottom. For several hours we toiled up this steep canyon-side in silence. The rain continued to pour, and it was but a short time before I had been drenched to the skin and feeling thoroughly uncomfortable. I attempted to engage my guide in conversation, but these efforts did not meet with success; so, I, too, relapsed into silence as we went on through the dreary night. After what seemed an age, I could see the gray dawn beginning to show through my mask. Then we descended

into what appeared to be a wide mountain-valley or meadow, crossed it, ascended another short hill, and then, at last, our horses came to a halt. My guide dismounted, assisted me to alight, then conducted me into a house.

Shaking with cold and half dead from fatigue, I was led into an inner, warm room and the mask was removed. I found myself in what appeared to be a room in a large log cabin, a bright fire burned in an open fireplace, a lighted lamp stood upon a table, and the table was laid for a meal. When my guide retired from the room, he locked the door after him; and, as there was no window, I found myself effectually imprisoned.

I threw aside my raincoat and basked in the warmth of the fire. In half an hour or so the door opened and a masked woman entered, bearing a tray with my breakfast. She placed the food on the table, then retired as silently as she had come; however, I was hungry and needed no persuasive invitation to sit down and eat. The meal finished, I lighted a cigar and once more seated myself before the blazing fire. Dead tired, I soon was soundly asleep. It must have been nearly 9 o'clock when a man called upon me to follow him, and I was conducted into the living-quarters of the house and there found assembled six persons—two of them women—all masked.

One of the men advanced to where I stood. "Doctor," said he, "you have been called here upon a very delicate mission. One of our number has been accidentally and, we fear, seriously wounded. There is more than one good reason why it is better for you that you should never know where you are or upon whom you are attending; hence, these disguises and the precautions that have been taken in bringing you here. Before entering the sick-room, we must have your promise that you will never make mention of this visit as long as you live in this country, and I may add that your personal safety will depend upon your strictly observing these demands."

I merely bowed in assent.

"If you are ready, we will now visit the patient."

A Wounded Girl—Masked!

We passed into an inner room and there I saw lying upon a couch what, at first look, I thought to be a young man, but closer inspection revealed a young woman, hardly more than a girl. To my surprise, she, too, wore a black mask over her face. The girl

was moaning with pain and it required only a cursory examination to disclose the fact that she was consumed by fever, while a crude surgical dressing covered her left breast. Removing the bandage, I found that her breast had been almost completely torn away by a high-power rifle-ball. Those of you who have had experience with the explosive force of high-power missiles will readily understand that such a bullet, when entering the female breast at its lower internal margin, and passing upward and outward, to emerge near the outer angle of the clavicle, would leave the flesh in a pretty badly lacerated condition. The wound already was several days old and was beginning to show signs of sepsis. I decided at once that, in order to save the young woman's life, it would be necessary to perform what amounted practically to amputation of the breast.

The man who does surgery in the wilds of the Northwest must soon learn to adapt himself to conditions as he finds them, if he would succeed. It was manifestly impossible to get this patient out to where she could have hospital care, and it was equally manifest that unless something were done immediately she was doomed. Without question, I was here confronted by the biggest problem in my professional career, yet, there was no time to withdraw, and there was even less time for hesitation.

I arose from my examination.

"It will be necessary to amputate the lady's breast," I said to those standing expectantly about, "and in order to do so I must administer an anesthetic. I must request you to remove this mask."

"But," protested one of the women, "that will disclose her identity."

"Doubtless," I assented, "but absolutely necessary, nevertheless."

They drew aside and consulted in whispers. Then the same man who had talked with me before approached and spoke: "Doctor, will you give us your promise, upon honor, that should you ever, at any future time, happen to meet this young lady, by no word or look will you reveal the fact that you have met her before?" Assuredly, by this time I was so deeply interested in the case that I was willing to make any promise within reason;

so, when all was prepared to administer the chloroform, one of them removed the mask.

Stepping to the bedside, I looked into the pain-filled dark eyes of a strikingly beautiful young woman, and so indelibly were her features impressed upon my mind that I have not been able to forget them, although



DR. CHARLES STUART MOODY
Whose "Adventures of a Frontier Doctor" begin in this issue of CLINICAL MEDICINE

years have passed. Necessity compelled me to be my own anesthetist, my own assistant —one learns to do such things in the wilds, if he attempts to do surgery. That was before the days of finished asepsis; still, cleanliness working together with a naturally vigorous young womanhood eventually brought the patient through very well.

I completed my work, then seated myself by the bedside, to await the return of my patient to consciousness. All that day and the day following I sat there and ministered to her, and during that time we became quite friendly, so that, when the shadows of the third night fell, I bade her farewell with a feeling of sincere attachment. No matter what she might be, to me she was a suffering fellow mortal in need of my meager skill. My mysterious guide was ready with the horses and, mounting, we rode away on our long nightly return trip. When half a mile away from the cabin my companion halted, produced the handkerchief, and once more I

permitted myself to be blinded for the journey.

Another long, weary night we rode, my guide leading my horse, as before. Not a word did he utter during that journey. When the new day began to break we had come out upon a highroad. Our horses were halted and my blindfold was removed.

"This," said the guide, "is the old stage-road leading to P—. You have your choice either of going there, which is less than a dozen miles distant, or you may take the road directly home."

I turned my horse's head toward home, the man watching me until I was nearly out of sight around the bend in the road. Then he turned his horse and disappeared into the forest. I reached home safely that afternoon, tired and half-dead from loss of sleep.

The sequel to this incident happened some five years later in the city of L—, not many leagues from my old station in the mountains. We were attending a race-meet in

that city, the guests of friends. It was the day of the ladies' hurdle-race and we were awaiting that event. A young woman, mounted upon a beautiful black Kentucky thoroughbred, rode up to where our group was seated, dismounted, threw the reins over her arm and approached. I glanced at her and could scarcely restrain my start of surprise—it was my mysterious patient of the mountain-cabin.

My hostess turned to me: "Doctor Moody, permit me to introduce Miss K—, whom we hope to see carry off the honors today in the hurdles."

The young lady frankly extended her hand: "I am very pleased to meet you, doctor," she said. "We have never met before, have we?"

"I am quite sure I have never had that pleasure." I took her hand and looked her squarely in the eyes.

I lied like a gentleman—a doctor often has to.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

EDITORIAL NOTE.—In this introductory article, Doctor Beach suggests the highly practical character of the material to follow in succeeding papers, in which he will take up, one by one, the everyday emergencies which must be dealt with in corporation practice. The "company doctor" has this branch of practice down to a science and can give information of the utmost value to the general practitioner. Read this article carefully—and be on the lookout for the next one.

ANY work, however important and necessary it may be, is deprived of half its usefulness when it is not systematized. No matter how carefully and nicely a surgeon may do his work, the result, gratifying though it may be both to surgeon and patient, is rendered doubly valuable by careful recording and classifying. Doing this, at the end of a period of years, one has tabulated records to which instant reference may be made and exact conclusions reached—a result obtainable in no other way, and as gratifying to the surgeon as it is valuable to his associates and those to whom he is directly responsible.

Not all men are gifted with the ability to arrange and classify; the dull routine of business does not appeal to them, their education has not prepared them for this detail work, and their brains refuse to move along new and unaccustomed grooves.

But, it is along just these lines that the exigencies of big business demand of its servants that they shall move, and many

costly trials have been made to find men who, in addition to the highest grade of technical surgical skill, possessed also the rare ability to direct and care for business details entirely outside the province of a surgeon.

Little by little, by a slow process of "feeling out," by repeated careful trial and investigation, a class of surgeons has been evolved who are exactly fitted to the duties of such a position; and it is with these men—who may be termed corporation-surgeons—and their work that this article is intended to deal.

Corporations Developing New Surgery

Inasmuch as the great corporations are responsible for many great advances in methods, both commercial and social, they are largely to be credited with this advance. So, too, these large concerns must be given credit for the origin of a new class of surgeons—men who are gifted with technical skill of the highest order combined with a business ability and diplomacy that is rare in disciples of Aesculapius, yet which in

these days is recognized as an absolutely integral factor of success.

It seems to be the usual and inevitable result of an education in medicine that a man thinks, feels, and acts only along professional grooves, rendering him utterly unable to cerebrate along business lines. The exceptions to this rule are remarkably few and will explain why there are comparatively few wealthy physicians, and such a vast army of only fairly financed and even poor men in the profession.

The Requirements for Success

The corporation singles out and engages the surgeon of proven professional and business skill—one who also must have the rare ability to associate diplomatically with all classes and grades of men, from the humblest "hunkey" to the urbane, polished attending man. More of a commendatory nature might be said about the corporation-surgeon, but the foregoing will serve to indicate what he is and to show the qualities necessary to the fulfillment of the duties of the position.

The question now naturally arises, "What are the duties which require such unusual and diversified skill?" Well, it is the object of this paper to set forth a nebulous picture, a faint shadowy concept of a few of these duties; for, naturally, it would be an utter impossibility to enumerate them all, since they are not as yet known, new situations arising every day, that require instant and trained decisions, and the result of which will form the precedent for future incidents of a similar nature.

"Oh," you will say, "I have the same factors arising in my work every day."

Yes, my dear doctor, all very true, but your decision and judgment are based on your professional training of years past; the corporation-surgeon, on the other hand, bases his decision, not only on professional training, but on a firm knowledge of the legal relations existing between employer and employee, on the man's future usefulness as a corporation-unit, on the mental caliber of the patient, on his social and domestic environment, and even more—for, in every decision the corporation-surgeon must bear in mind that his action must subserve the highest interests both of employer and employee, and that his decision will be subjected to the cold white searchlight of trained business minds, while he, and he alone, will be held strictly accountable for the outcome.

It is not of recent growth, this great work—some concerns have been caring for their employees for twenty years, and today all realize the importance of careful systematic methods designed to produce the highest efficiency in results.

The manner in which this work should be carried on has been subjected to many changes, all details of which had to subserve business expediency; and they have been determined by the circumstances arising from individual cases or classes of cases.

The foundation of the whole structure is, of course, good surgery, and this is the *sine qua non* that stands preeminent. An obstacle soon arose, however, in the discovery that, although a good surgeon, a given man was not qualified in other ways to cope with the needs of the position. This necessitated change, and it was only by repeated trials and experiments that the right men eventually were found. Once found, though—ah, that surgeon held a lifetime position and, in due time, had his assistants, who, in turn, were trained to the way they should go, or, having proven unsatisfactory, were dropped from the service.

It will be interesting to note the remarkable changes which have taken place as a result of repeated changes in methods used—all with the same end in view and yet, so different in manner of accomplishment. That the matter may be more clearly understood, a pen-picture of the old and the new methods will be given true in every detail and free from exaggeration, so that the reader may grasp the full import of the term "business-expediency," and judge what progress has been made by the application of this factor.

The Old Way in the Shop

For the sake of convenience, the following will be called "the old method"—not that it is so very old, for it has not been many years ago when it was the accepted method, but simply in order to give it a name by which it may later be designated.

Tom Jones was a first-class machinist, and for fifteen years had worked at a lathe, whose busy whirr day after day was music to his ears. It was, indeed, the only music to which Tom had a chance to listen, save possibly the laughter of his children, for wages were not any too high, and Tom, with his family of seven, could not save much; and when the rent was paid and the grocer's bill settled there was not much left, and that bit usually went for little shoes and stockings.

On this particular morning, Tom had some tools to grind on the emery wheel and was busily engaged in this work when suddenly his fellow workmen heard a sharp cry, and, looking to see where it came from, beheld Tom with his hands to his eyes, moaning with pain and rocking back and forth.

"Did it get both eyes, Tom?"

"No, only one, but it's way in deep; and, my God, how it hurts!"

"Come on, man, me and Jerry will take you home and get the doctor for you."

The procession formed, Tom, with his hands covering his injured eye and supported by a friend on either side, in the lead. There were sympathetic headshakes and murmurs as he passed by, and one old man was heard to say, "Too bad, that's the third man in two weeks." But in five minutes after poor Tom had left the shop the interrupted work had been resumed, another man had taken Tom's lathe, and the work went on as though nothing had happened—there was no time for idleness. Arriving at his modest cottage, Tom's wife began weeping bitterly over his misfortune, meanwhile placing cold cloths on the injured eye, by the simple expedient of wringing an old towel, hastily grabbed from a nail behind the door, out of water in the family wash-basin.

"Want me to get old Doc Smith, Tom?"

"Yes, Jerry—and tell him to hurry."

"Sure—I'll get him here in half an hour, if he's home."

But Doctor Smith was not home just then, and it was over two hours before Tom's eye was cared for, the good wife having, during the period of waiting, carefully placed a large bread and milk poultice over the eye, to ease the pain.

When the doctor came he looked carefully at the injured eye and told Tom that he had received a mighty bad injury, and that all he could do was, to keep down inflammation, and, then, if it wasn't better by next day, he'd have to see the eye-doctor and find out what he could do. Needless to say, Tom was not better next day and at last—several days later—went to see the eye-specialist. The latter promptly advised complete enucleation of the eyeball, inasmuch as it was badly infected, sympathetic ophthalmitis even then threatening the other eye.

—And Tom Lost His Eyes

It's the old story, and one that in former days repeated itself over and over—Tom lost both eyes and became dependent on the

community for his support, eventually learning to make brooms and earning a precarious living in that way.

And who paid the bills? Why, Tom did, of course! Didn't Tom get hurt? Wasn't it Tom's eye that had to be operated on? Well, then, why shouldn't Tom pay the bill?

Now, you'll say, "This is a grossly exaggerated story, told for illustrative purposes." No, my dear doctor, it is true in every detail, and not only true, but typical of hundreds of cases under the old régime. There were some few laudable exceptions, when, possibly, the employer paid the man's rent for two months, or three months, "inasmuch as Tom had been working for him for twenty years"; or maybe the employer's wife sent ten dollars' worth of groceries to "help out." But all of this was either open charity or because this particular Tom's employer had a really soft heart. However, it was not the accepted and established plan—all Toms were not treated in that way.

Let it be remembered that people's hearts, in those days, were just as big, just as warm as they are today, but the individual's desire, prompted by his heart, was not able, alone, to let him do all he might wish to do. Besides, if he took care of one man, he should very properly take care of all of his injured men and—well, he could not see his way clear to assume that burden.

The preceding is significant of the times in which it happened and was undoubtedly all that could have been expected under then existing conditions. It must not be thought, as said, that all employers followed this plan, because there were exceptions; but the main fact that stands out clearly is, that there was no settled plan—it rested entirely with the employer and depended altogether on the circumstances surrounding the accident as to what was being done. Many—most—employers did nothing for their disabled workmen; they merely set it down as an "accident," which happened through no fault of theirs, and therefore they were in no way "responsible." Others did, indeed, exert themselves to the uttermost, but only for the time being, entirely forgetting the future of the victim of the accident, his family, and their prospects.

The need of some plan to provide for this contingency was dimly felt, but no one felt strongly enough on the subject to make any attempt at organizing and perfecting a general method that would adequately provide for the care of victims of accidental injuries in discharge of factory and shop duties.

The unfortunate part of it all was, that, where one man was cared for and given such help as was needed, a dozen others were unprovided for, and this soon provoked adverse criticism and dissatisfaction among working-men. This led to even worse things happening, such as damage suits and legal actions of various sorts. Some factories were even spoken of unfavorably by workingmen, who warned their fellows that such and such an employer was "no good," and this resulted in difficulty for many employers in getting men to work for them, often necessitating the payment of an extra large wage in order to fill certain positions. But, again, other factories were victims of unscrupulous artisans, who, for the most trivial injuries, demanded help and assistance for an unwarranted period of time, thus making it doubly hard for a worthy man to get such help as he required.

At last, little by little, a change began to become apparent. First one employer made an advance, then others, profiting by his example and success, followed his lead, and, so, in the course of years, custom so shaped itself that any employer who did not care for his disabled men found himself much disliked, and thus was forced to mend the error of his ways.

The Modern, Better Way

As an example of the improvement which these conditions have undergone the following incident may serve to illustrate:

It is Bill Brown who now is grinding a tool at the emery wheel. Bill Brown, however, has on a pair of heavy goggles, to protect his eyes against the possibility of harm. Despite all his precautions, however, a fragment of the tool flies up and strikes the glass with such force that it cracks it and drives a splinter of the glass into his eye. Bill, startled, cries out, and removing the goggles, which have saved his eyes from a far worse injury, makes his way to the foreman.

"Got something in my eye, Williams."

"That so, Bill? Come on with me, quick."

Bill is lead to the first-aid cabinet fixed to the shop-wall and there a piece of sterile gauze is placed over the injured eye and fastened with a gauze bandage. The foreman then conducts Bill to a room, usually in the same or a nearby building, and by the time they reach this place—which is called the hospital—a surgeon who is regularly engaged for this work and does nothing else, takes him in hand. After a careful examination, the surgeon says:

"Too bad—it's a penetrating injury and we shall have to see our eye-man. You'll

have to go with me to the hospital, Bill, for a few days' stay."

So, Bill gets on his coat and, accompanied by the surgeon, steps into a waiting automobile and starts for the hospital. The oculist, who is awaiting them, by means of a slight operation removes the piece of glass.

"About a week, my man, and then you can go back to work."

Bill accordingly stays in the hospital a week and is seen daily by the oculist, and all requirements are attended to. At the termination of the week, he is discharged and goes back to work—with two good eyes, thanks to prompt care and careful attention by the best medical aid money could secure, and all without any expense to him.

What a difference between the experience of Tom Jones and of Bill Brown, of Bill of today and Tom of former years! And all brought about by the constant and irresistible march of progress, spurred onward by that potent, but silent force, public conscience, and fostered by the great enlightener, education. It was to be, and it is. For, so it was decreed. But what of the personal factors concerned in bringing about this change—what have they done and what are they now accomplishing?

How This New Plan Works

These questions are best answered by telling of the general plan which prevails among corporations and the general methods by which this work is handled. This plan varies in different plants and in accordance with the individual views held by the instigators, but in the main facts one plan resembles another very closely.

In the first place, the foremen are called together and instructed to tell the men working under them of the advantage and necessity of reporting at once any and every accident. The foremen do this, because they often have under their control workingmen speaking foreign languages, and it is necessary to talk to them in their own tongues. Some of these foremen are wonderful linguists, speaking six and seven languages fluently, while having some knowledge of first-aid surgery as well.

The first-aid cabinet, which is installed, contains bandages, gauze constrictors, simple medicaments for burns, and the like, each and every article plainly designated by number, while a full description of the uses to which it may be put is contained in a pamphlet also placed in the cabinet.

Then a welfare department is organized, usually under full charge of some clever, well-

informed office-man, who knows the workmen and whose special duty it is to keep track of every injured man or woman, from the time anyone is hurt until he resumes work. Many of the companies make a full and complete examination of the applicant for work and keep a record of this examination for future reference, for it occasionally happens that some clever rascal claims permanent disability from an injury received in childhood's happy hours and the claim is paid! Preliminary examination does away with this and is becoming more generally practiced.

Then comes the hub of the wheel, the *sine qua non*, the most important factor in the whole plan—the surgeon. This man must be a thorough master of surgical technic and especially of emergency methods his judgment and trained intelligence must make a decision that is irrevocable, yet, must be tempered with charity and mercy. While, through it all, he must have a keen mental eye on the future, for, if he could amputate when conservative treatment would have been done better for the future welfare of his patient, he has been remiss in his duty and will not hold for long the important post which he occupies. His trained eye and mind must detect instantly the best method of operative procedure and as instantly apply it. And woe unto the unfortunate foreigner who says, "Meester doktor, no can work"; for, malingeringers are cast into outer darkness at once.

Immediate Care Imperative

The injured employee is cared for *at once*, remember that. It's a rule that may not be broken, and many a big fellow presents himself shamefacedly before the surgeon when he has received some trivial injury and wonderingly accepts as careful an examination and dressing as if he were badly hurt, only to be told to return again the next day for a

renewal of the dressing. However, the example of one or two cases of septicemia soon convince the workers that the reporting and getting dressed of even the most trivial injury is the right thing to do, so that cases of blood-poisoning are almost unknown in corporation-surgery.

Patients for hospital care and attention are instantly transferred by automobile or ambulance, and if the work is outside the realm of the general surgeon, a special regional surgeon is called to do the operation. It is not a question for conference or consultation: the surgeon has *carte blanche* to do everything for the best interests of his patient; and that, too, at once.

Although it takes an experienced surgeon to operate, it takes a much more experienced surgeon to know when *not* to operate—to know—yes, and to have the courage of his conviction—when to wait and, little by little, carefully trimming and stitching, allowing and assisting nature to do its best, at least to save a useful finger or two, and to experience the intense personal satisfaction of seeing his patient return to his original job and earn a full day's wage. And that is the acme of good surgery. But this can not be taught, except by years of varied experience and the practice of thorough, consistent, cleanly methods of operative procedure.

This, then, is a general view of this great and important branch of surgery, told in general and unbiased terms and based on the personal experience of the writer and of a host of warm friends who are corporation-surgeons all over the United States.

More specific illustrations will be given in later chapters, together with details of the emergency-methods used. These latter, it is believed, will prove of value to the general practitioner as the last word in emergency-surgery.

[*To be continued.*]



Modern Treatment of Nasal Catarrh

By BURTON HASELTINE, M. D., Chicago, Illinois

AN INVITATION from the editor to write upon the subject of catarrhal deafness has resulted in the selection of this topic for two very practical reasons. First, the treatment of nonsuppurative deafness, in the great majority of cases, implies the problem of dealing with nasopharyngeal catarrh. This reason is well known; the second, however, is less familiar, namely: under modern methods, such conditions are far more amenable to treatment than they were formerly, and that, too, by measures available to the physician in general practice. This does not mean that all forms of nasal disease are easily curable; still, it signifies that, with a little attention to differentiation and a little skill in relatively simple procedures, the physician in general practice can obtain gratifying results in cases that he has been inclined to shun.

Every doctor has occasion to remark upon the frequency with which people otherwise in a normal state of health complain of what they call catarrh. Indeed, there are but few people who when questioned will fail to acknowledge that, at least, they have a mild catarrhal trouble. Usually the particular climate or locality where the individual resides is blamed for the difficulty, as being too high or too low, too near the water or too far away from it. There is probably no habitable part of the globe that is not said, by somebody, to be "bad for the catarrh," and, if Commander Peary were questioned, he no doubt would aver that it was so at 90 degrees north latitude.

What Is Meant By "Catarrh"

When we seek to discover what in the popular mind is the meaning of the word "catarrh," we find that it applies to almost any chronic nasal abnormality, but especially to one accompanied by some form of discharge. This discharge may be anterior or posterior, and it may vary from a nearly normal secretion to the most extreme ozena. Any disturbance of the proper secretory balance, of course, results in unnatural accumulations in the nose, which, with the inevitable infection, produce what the patient calls catarrh.

One hears many speculations as to why so many people "think" they have catarrh; however, no one seems to have hit upon the

very obvious reason, namely: that—it's true that they have.

A very large percentage of adult people do, indeed, suffer from some form of nasal infection, and the neglect of this condition is the cause of more trouble than is generally recognized. Such trouble not only includes obvious local damage, such as deafness and sinus disease, but also toxemia, rheumatism, and gastrointestinal difficulties not so easily traced to their source. No case of self-diagnosed catarrh should be dismissed as trifling before a determination of the amount of actual pathology has been made. This can be done with sufficient accuracy by anyone with a good knowledge of general medicine plus enough special training to make an average rhinological examination.

General Medicinal or Surgical Measures Rarely Cure

It thus becomes a question of differentiation. If the patient's general metabolism is faulty, this must be corrected, whether local measures are employed or not. It is rare, however, to find a nasal infection, other than a luetic one, that will yield to general therapeutic measures alone. Long-established infections and local tissue changes usually make it impossible to eliminate the disease without direct attention to the parts involved. Commonly there are structural abnormalities requiring surgical correction before complete relief is possible. But, there is a large field for local nonsurgical measures, both in cases where operation is not required and as treatment following operation, since it is but rarely possible entirely to cure the disease by means of surgical measures.

The crudity and the futility of ordinary nonsurgical measures directed to the nose is notorious. Everyone appreciates the uselessness of the nasal spray and vaporizer, but many doctors still employ them in a sort of helpless way, just to be doing something.

Much Can Be Done by Simple Procedures

It will be a comfort to such physicians to learn that by the mastery of a few simple procedures and without surgical skill they can accomplish real results in many of these "catarrhal" cases.

To this end, it is essential first of all to make a complete inspection of the interior of



Fig. 1. An anteroposterior view of the head, showing the extent of the tampon vertically, applied as recommended by Dr. Haseltine.

the nose and nasopharynx by means of artificial light and suitable specula. The ability to do this can be acquired by any physician, with little difficulty. In the next place, it is necessary to cleanse the nasal spaces, and this can not be done by the mere spraying of the anterior nares.

The nasopharynx and posterior ethmoid region can be cleansed only with the aid of instruments that will throw solutions into the vault and high into the middle meatus, which receives the drainage from the largest of the accessory cavities.

It must be understood that chronic catarrh never results from pathologic states limited to the nose alone, except in obvious structural deformities. Some of the accessory cavities are usually involved; the most common, of course, being the ethmoid labyrinth.

The Ethmoid Labyrinth the Point of Attack

It is to this region that treatment must chiefly be directed in order that the best results may be obtained. While the treatment is primarily a problem of cleansing and drainage, it is now possible to go further than this and to employ

more active means in combating these infections.

The profession is indebted to Dr. J. I. Dowling, of Albany, New York, for the idea of tamponing the nose with certain solutions that exercise a curative influence upon mucosal infections. Doctor Dowling has conducted an interesting series of experiments to learn the effect of various silver solutions employed in this manner, and has found that a 10-percent solution of argyrol is best adapted for clinical use.

This method has now been regularly used by a considerable number of rhinologists during more than five years, and its value is established beyond question. Not only is it efficacious in the treatment of nasal and tubal infections, but Doctor Dowling has shown it to be applicable in those ophthalmic conditions now known to result from sinus disease.

In view of this wide range of usefulness, together with its simplicity of application this procedure should be better known among general practitioners. No better description of the manner of proceeding can be given than the following extract from an article published by Doctor Dowling in 1910:

"Essentially, the method of treatment is, to employ intranasal tampons of such length and size as will snugly fit between the middle turbinated body and the septum, and extend



Fig. 2. Partial view of tampon, partially enveloping the ethmoid turbinal.



Fig. 3. Same head as in Fig. 2, but without the tampon.

from the anterior portion of the nose to the choana posteriorly. These tampons should first be saturated with an aqueous solution of argyrol of 40 grains to the ounce. Through capillary attraction, they will deplete the proximate soft tissues and drain the ethmoid cells and other sinuses. In order to drain the maxillary sinuses, the tampons should be placed under the scroll of the middle turbinated body and above the upper part of the inferior turbinated body. However, since the soft tissues are usually greatly engorged and hypertrophied, they in themselves will assist in the capillary attraction, and it frequently is only necessary to place the tampons between the middle turbinated body and septum. The tamponades should be made sufficiently large to be snug, but not so sizable as to occasion pain in their placing. They should remain *in situ* for from ten minutes to half an hour, and very occasionally an hour.

"The primary effect is, irritation of the conjunctivæ, sneezing, and running from the nose. Upon removing the tampons, they will be

found bleached, either in spots or throughout their extent. This is due to the action of certain germs upon the solution employed to saturate the tampons.

"Subsequent to the withdrawal of the tamponades, the nose should be thoroughly douched by means of a compressed air apparatus or through use of postnasal or intranasal douching. Any mild alkaline solution is acceptable for the purpose. The final step of the technic is the use of some bland oil."

Doctors Hubeny and Hartung, of Chicago, have been good enough to make a number of roentgenographs for the writer, showing these tampons in place. In the cases photographed, an inert bismuth paste was added to the solution, for rendering the view clearer.

Figure 1 is an anteroposterior view showing the extent of the tampon vertically. Figure 2 is a lateral view of the tampon partly enveloping the ethmoid turbinal. For comparison, a photograph of the same head, without the tampon, is shown in

Figure 3. Figure 4 is a lateral view of another case, with the tampon placed far back into the posterior ethmoid spaces. In this figure a line is drawn around the area of the tampon. It will be noticed



Fig. 4. Lateral view of another head with tampon placed far back into the posterior ethmoid space.

that it extends backward as far as the sphenoid sinus and that its upper portion reaches to the cribriform plate. By comparison of these

photographs with a chart of the intranasal structures, one can form a correct idea of the location.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

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EDITORIAL NOTE.—We believe that this series of articles (of which this is the first), to be contributed by Doctor Butler, will be one of the most practical and helpful ever offered to the readers of "Clinical Medicine." The Doctor purposed to give just what the general practitioner wants to know in order to treat the "chronics" successfully at home.

THIS is the first of a series of articles which I shall contribute to CLINICAL MEDICINE on "What the General Practitioner Can Do in the Treatment of Chronic Diseases." I know that by writing what I intend to I may perhaps divert a certain amount of business from the sanatorium of which I am medical director, as well as from other similar institutions. But, for a long time I have been convinced that the average general practitioner, by expending a little money in enlarging his office by one or two rooms and installing relatively inexpensive equipment, can treat successfully a large number of chronic diseases, where now he is obliged to send these patients to some sanatorium; thus saving money for his patients, besides enhancing his own reputation and increasing his income.

Every honest physician desires to do the best that he can for every chronic sufferer that consults him; if, however, he does not know how to treat chronic diseases as they should be treated or if he has not the facilities for their proper treatment, he is bound, in all justice to his patients, to refer them to some reliable medical institution where they can be properly treated.

Now, as I have just said, the great majority of these cases the general practitioner can treat himself, provided his office is equipped so that he can give simple hydrotherapeutic and certain electrotherapeutic treatments.

As to electrotherapy, of the various currents, or modalities, being used in medicine at the present time, the following may be mentioned:

- Autocondensation (high-frequency),
- Diathermy (high-frequency),
- Fulguration (high-frequency),
- Spray of Efflueve (high-frequency),
- Ozone inhalation (high-frequency),

- Vacuum electrodes (high-frequency),
- Static spark (high-frequency),
- Vibratory massage,
- Pneumo massage,
- Suction,
- X-ray therapy,
- Straight galvanism,
- Surging galvanism,
- Slow sinusoidal current,
- Rapid sinusoidal current,
- Surging sinusoidal current,
- Multiplex sinusoidal current;
- Compressed air,
- Therapeutic light,
- Static electricity (in its several forms).

Now, it is true that not every practitioner who is employing electrotherapeutics in his practice makes use of each and every one of these agencies. Neither is the surgeon employing every one of the thousands of surgical instruments made. From my experience, however, I am firmly convinced that the general practitioner who is anxious to render the best and most modern forms of treatment should include practically all of the aforementioned agencies in his work.

The average "chronic" has, as a rule, taken so many drugs and in such large doses, by the time he reaches the physician who is competent, ready, and willing to apply the proper treatment, that he is in a condition where he needs, for a time, elimination and physiologic or physical measures. Of course, I am not belittling the value of drug-medication, for, the right drugs properly administered, and in the proper dosage, are indispensable. I shall have more to say on the drug-therapy of chronic diseases later.

It is also true that in some instances two or more of the above-mentioned agencies might be used—and are being used—for the treatment of similar conditions, but (to

refute the possible argument, "Why put in two agents for the same treatment?") I can call attention to the fact that there are, for instance, dozens of drugs being used for the treatment of the same disease. Again, there are hundreds of surgical instruments, all of which are devised for one certain operation. In other words, "What is good for Jack is not necessarily good for Jill."

Considering the dollars-and-cents side of this question, is it not true that the average practitioner comes in contact with a case now and then which arouses his professional curiosity, but, to his chagrin and annoyance, the patient comes only once, while, as a general rule, ethics forbids the following up of the case? This is particularly true where the physician writes out a prescription and it is filled at a drugstore. On the other hand, the physician who dispenses his own remedies, and has an office-equipment enabling him to employ the physical modes of treatment, and who personally administers the treatments, will have better control of his patient and be more able to help him than the doctor who merely asks a few questions of his patient and then writes a prescription.

To the physician equipped to treat chronic diseases properly, the patient will return often for subsequent treatments; and, while the charge for each treatment will be more than for an ordinary office-call, it will be worth much more to him, and he is usually glad to pay the difference. Besides, it can readily be seen that the physician, by doing business in this way, can get into closer touch with his patients, to say nothing of increasing his income.

Electrical Equipment Required

Now, to get down to the practical business side of the question, it hardly seems possible, but it is true, nevertheless, that all of the aforementioned physical therapeutic treatments, with the exception of the static currents, can be given if one possesses the following combination x-ray and high-frequency outfit: the Victor No. 4 or No. 7 outfit; the Victor No. 62 combistat; and the Victor therapeutic lamp. The cost of such an equipment (exclusive of the apparatus for static currents) would be in the neighborhood of \$650; this outlay including all the necessary accessories. Such an equipment would place at the disposal of the physician an x-ray apparatus sufficient only for radiotherapeutic treatment of the extremities and for giving superficial treatments, but would not be fitted for heavy radiographic work.

The general physician can see the advantage—or disadvantage, as the case may be—of having diagnostic rays available, such as those yielded by the Victor No. 4 outfit.

In addition to the electrotherapeutic apparatus mentioned above, the physician's office should have at least one electric-light cabinet. Light, air, and water represent hygienic and curative factors of the greatest importance. The process of metabolism is influenced tremendously by light; the body requires light for its health and sustenance. The most vital of physiological processes, respiration, both cutaneous and pulmonary, is directly affected by the presence or absence of light.

The electric-light cabinet enables us to make practical use of the various physical agencies which are included in light. The light of the electric arc has approximately the same spectroscopic composition as sunlight. The light of the incandescent globe is rich in thermic rays. Thus we are prepared to look upon the electric-light cabinet as a valuable addition to our therapeutic armamentarium, combining, as it does, the power of the various rays in the destruction of disease-germs, in the reestablishment and stimulation of physiological metabolism, and in the performance of the many important functions of light in and on the animal-economy.

It would take me beyond the confines of a short résumé to discuss in detail the minute phases of our subject. Suffice it to point out some of the effects which may be produced by the proper use of the light-cabinet.

Uses of the Electric-Light Cabinet

As a producer of copious diaphoresis, the electric-light cabinet rivals the Turkish bath. Winternitz, probably the greatest authority on the subject of thermo- and hydrotherapy, states that since the introduction of the light-cabinet he has practically abandoned all other methods. The light-bath produces sweating, without intense heat. The light-bath is, therefore, indicated in all cases for which other apparatus are adapted. Whenever cutaneous excretion is to be stimulated, the electric-light cabinet will do the work. Either will alter, stimulate, and rectify metabolism promptly. Either will augment absorption, stimulate the appetite, and help the organism to rid itself of all kinds of deleterious gases, vapors, and fluids.

The following statistical list of diseases, with the percentage of cured cases added, is taken from the reports of one of the numerous

German phototherapeutic institutions, and shows the clinical importance of the light-bath more eloquently than any physiological and therapeutic argument could possibly demonstrate it. The cases were all treated in the electric-light bath:

Light, in fact, occupies the position of the universal disinfectant, because without it the purification of river-water would be inconceivable. There is no longer any doubt that the pathogenic bacteria are affected by the light. Geisler exposed a culture of typhoid-

| NAME OF DISEASE | No. of Cases | Cured | Much Improved | No Result |
|---|--------------|-------|---------------|-----------|
| Rheumatism..... | 116 | 81 | 30 | 5 |
| Gout..... | 86 | 53 | 33 | .. |
| Gout, deformative..... | 3 | .. | 2 | 1 |
| Neurasthenia and hysteria..... | 82 | 45 | 31 | 6 |
| Lues..... | 64 | 46 | 16 | 2 |
| Obesity..... | 62 | .. | 50 | 12 |
| Asthma..... | 49 | .. | 40 | 9 |
| Gonorrhea and consequent disorders..... | 38 | 20 | 15 | 3 |
| Heart disease..... | 36 | .. | 36 | .. |
| Fatty degeneration of the heart..... | 33 | 20 | 13 | .. |
| Sciatica..... | 32 | 28 | 3 | 1 |

The researches concerning the biologic importance of life in conjunction with the functions of the human organism have, indeed, revealed many interesting facts. It has been shown that relative degrees of light will affect the contractility of protoplasm. The red blood-corpuscles, the direction, speed, and duration of the movements of certain infusoria and diatoms are directly influenced by light. The muscular excitation and activity of frogs has been shown to be much more energetic under the influence of light than in the absence of light. It has been proven that the quantity of coloring matter in the red blood-corpuscles increases and decreases in accordance with the amount

bacilli to the light of a thousand-candle-power arc-lamp, and after three hours of illumination the growth of the culture had been practically suspended. Aufrech inoculated various animals with the bacilli of milzbrand, diphtheria, and tuberculosis. The inoculated animals that were kept in the dark died within two or three days; those that were exposed to the light usually resisted the effects of the inoculation. Many other facts could be added to those here mentioned. Those who are interested in the subject will find a great deal of information from the writings of Below, Kattenbracker, Winternitz, Kelllogg, Bier, and, above all, the classical writings of Finsen. See table following:

| NAME OF DISEASE | No. of Cases | Cured | Much Improved | No Result |
|---|--------------|-------|---------------|-----------|
| Bronchial catarrh and emphysema..... | 28 | 10 | 18 | .. |
| Neuralgia..... | 24 | 6 | 17 | 1 |
| Ulcus cruris varicosum..... | 23 | 10 | 7 | 6 |
| Stomach and intestinal catarrh..... | 20 | 5 | 15 | .. |
| Mild affections of the liver..... | 20 | 10 | 7 | 3 |
| Affections of the knee-joint..... | 15 | 10 | 5 | .. |
| Nephritis..... | 15 | .. | 15 | .. |
| Lumbago..... | 11 | 14 | .. | .. |
| Catarrh of the ear, and deafness..... | 11 | 1 | 9 | 4 |
| Nasal catarrh, and affection of the larynx..... | 13 | 5 | 8 | .. |
| Anæmia..... | 12 | .. | 12 | .. |
| Diabetes..... | 10 | .. | 10 | .. |
| Headache..... | 5 | 5 | .. | .. |
| Chronic constipation..... | 4 | 1 | 3 | .. |
| Professional illnesses..... | 3 | 2 | 1 | .. |
| Erysipelas..... | 3 | 3 | .. | .. |
| Influenza..... | 3 | 3 | .. | .. |
| Contracted scars..... | 2 | 2 | .. | .. |
| Ulcus molle..... | 1 | 1 | .. | .. |
| Skin diseases (herpes, etc.)..... | 63 | 24 | 33 | 6 |
| Tabes..... | 40 | .. | 7 | 33 |

of light to which the animal body is exposed.

That light is fatal to bacterial life has been suspected by many observers long before the time of Finsen. As far back as 1870, Es-march exposed his surgical instruments to the rays of the sun for the purpose of disinfection.

Excellent electric-light bath cabinets, large enough for a physician's office, can be purchased at from \$95 to \$150 each.

A hot-air apparatus for the extremities and other regions of the body, and, if possible, a hot-air body-apparatus, should be a

part of the equipment of the office of every up-to-date doctor. Treatment with super-heated air is invaluable in many chronic diseases, notably those of the kidney, liver, blood, skin, and joints. The sphere of usefulness of hot-air therapy is daily widening, and the progressive physician will employ this form of treatment wherever it is indicated. Such an outfit for ordinary uses can be procured for \$100, and down to as little as \$15.

In this connection, I would recommend the employment of cups. One who has not resorted to dry- and wetcupping would be astonished were he to see what results, in certain cases, I have obtained by this method. In addition to a set of drycups, I would earnestly advise the purchase of Bier's cupping apparatus for the foot, knee, elbow, hand, and arm. This can be had for \$60 complete (Betz). Of course, it is expected that every physician will have a blood-pressure indicator.

Hydriatic Measures

Now, lastly, the physician should have one room where certain hydrotherapeutic measures could be given; simple measures, such as the application of compresses, lavage, enecrolysis, irrigation of the genitourinary canals, and so on. The general practitioner, however, will employ most of his hydriatic measures in the home of the patient, and the physician himself should be perfectly familiar with the rationale and technic of the various procedures, so that he can give the treatment, or, what is better still, if his practice justifies it, have a competent nurse give the treatments under his direction. The procedures which are of value in the treatment of chronic diseases are the following:

1. Ablution: a useful preliminary to more active hydriatic procedures. In such cases as anemia, chlorosis, phthisis, it is of great value; also in neurasthenic cases which do not require more heroic measures. In the more severe cases, it offers a gradual introduction to the douche and other more active measures.

2. The half-bath is one of the most universal hydriatic procedures we have. In chronic diseases, after, for instance, the wet-pack has produced dilatation of the superficial cutaneous vessels, the half-bath is a necessary sequel for the purpose of maintaining the tone of those vessels.

3. The affusion is an excellent substitute for the douche in chronic diseases, if it is administered with care and precision as to

temperature and the patient's reactive capacity.

4. The drip-sheet, or sheet-bath, is applicable to many chronic ailments, especially as a substitute for the douche, which can be had only in institutions, viz: as a tonic in chlorosis, anemia, and neurasthenia; as a derivative in intestinal catarrhs; as a revulsive and alterative in melancholia, hypochondriasis, neuralgias; and in pulmonary and bronchial diseases.

The flexibility and simplicity of the sheet-bath commend it especially. It is probably the most flexible hydriatic measure known.

5. The cold rub is useful in the anemia of feeble persons, phthisis, and other conditions of defective hematos.

6. The wet pack is extremely valuable in all chronic cases in which defective tissue metamorphosis is a prominent element, as in diabetes, rheumatism, gout, some disorders of the digestive apparatus, anemia, and chlorosis. In the functional neuroses, the wet-pack offers a means of allaying irritability and, if succeeded, as it should be, by a half-bath, douche or other active mechanico-hydriatic procedure, it will refresh the nervous system, improve tissue change and the blood-making function, and invigorate the circulation.

7. The wet compress, hot or cold—according to indications—is perhaps more universally employed than any other hydriatic procedure. It will be found useful in many chronic conditions, such as chronic rheumatism, sciatica, lumbago, chronic endocarditis, and in the cardiac neuroses.

8. The hip-bath is indicated in paralysis of the muscular fibers of the bladder and intestines; in prolapsus ani, spermatorrhea, proctitis, hemorrhoids, impotence of men arising from muscular debility, and cutaneous anesthesia; in weakness of the uterine ligaments; prolapsus uteri; leucorrhea due to chlorosis and menostasis; some forms of passive hemorrhages; liver hyperemia; muscular atony of gastric and intestinal coats, as manifested by constipation, flatulence, and so on.

These are some of the hydriatic measures that are indispensable in the treatment of many of the chronic diseases, and the physician should employ them when indicated, either in his office, if equipped for it, or in the home of the patient. It will behoove every physician who is desirous of successfully treating chronic diseases thoroughly to master the technic of these hydriatic procedures, familiarizing himself with their phys-

iological actions, so that he may intelligently treat his patients at home, instead of sending them to some water-cure establishment, in many of which, moreover, the various hydriatic procedures are anything but scientifically administered.

On the value of hydrotherapy in chronic diseases, we have the testimony of many teachers, among whom is Prof. F. A. Hoffman, of Leipzig, who says: "Cold water is a therapeutic agent by the correct application of which we may most surely, and without danger of reaction, exercise and invigorate the nervous system; and herein I seek its fundamental significance in the treatment of all possible internal diseases. I am convinced that in time all chronic diseases of the organs will be drawn into the domain of the bath-treatment."

I have thus far endeavored to impress upon you the importance of "preparedness," of being fully equipped, not only with the necessary apparatus, but with knowledge, so that you can treat chronic cases successfully at home; for, if you can not treat them successfully yourself, it is your duty, as I have said before, to send your chronic patients to some well-equipped institution where they can be properly treated.

So far as your material equipment is concerned, you can procure all that is necessary for from \$900 to \$1200, and you could make no other investment of such an amount that would yield you so large returns in your practice as will this.

How to Manage Chronic Diseases

Now that we are prepared to take proper care of our chronic patients when they come to us, I will proceed to call your attention to the following important points in the management of chronic diseases, namely:

1. How acute diseases may become chronic;
2. Focal infections as causes of chronic diseases, and how to detect them;
3. The condition of the intestinal canal in chronic diseases, and how to set it right;
4. Regulation of diet, and what is to be accomplished thereby;
5. The importance of elimination by various routes in the treatment of chronic diseases;
6. Exercise, artificial and natural, and how to secure it;
7. Rest and recreation as necessary aids in the treatment;

8. Occupation and habits as contributing factors;

9. The influence of psychotherapy in the treatment of chronic diseases.

How Acute Diseases Become Chronic

The two tendencies, that of chronic disease to assume an acute form and that of acute to continue in a modified form as a chronic ailment play a large part in differentiating remedial procedures. Chronic bronchitis, for instance, following an acute inflammation of the bronchial mucous membrane, a perversion of nutrition, yields but slowly to treatment. The irritant may be some toxin, some peculiar condition of the mucous membrane, or there may be a constitutional condition that keeps up an abnormally active state of nutrition in the membrane over which an inflammatory storm has gone and which has thereby been altered, as in suppressed gout or in syphilis; and the methods to be applied to these cases must accordingly vary from each other and from the normal.

There are two lines of procedure, the first consisting of general measures, and the second, local measures. In all cases of persisting organic changes induced by an acute disease, it is of the greatest importance to employ the constitutional treatment. There seems to be an incapability of effecting perfect repair in an organ that has once been injured. Sometimes a low, persistent cell proliferation will result from mere general debility, notably in the "strumous." Here are indicated warm clothes, good food, care of the general health, and suitable hygienic environment. As nearly perfect physiological rest as can be had for the part is absolutely necessary; for, if exercised, it repairs itself with difficulty or not at all. It is exercise that retards perfect recovery in parts whose functional activity, like that of the kidneys or the valves of the heart, is essential to the continuation of the organism. An attack of chronic nephritis would disappear soon and utterly if the kidneys could be made to cease their work, and mitral disease would occur infrequently if the vela of the mitral valve could be given a complete rest after an attack of acute rheumatism involving the endocardium.

When necessary, as in acute affections of the stomach, nutriment may be injected through the rectum, thus affording rest to the usual channels. In acute cerebral congestion, or meningitis, the brain should be rendered as inactive as possible. Inflamed joints should be forced to rest, and so should a fractured limb. Rest for the body is as neces-

sary in these cases as rest for the nervous system is necessary after a steamboat disaster or a railroad wreck.

Often the repair of some part which has suffered from an acute infection is retarded by some general condition, such as is found in rheumatism, gout, and syphilis. Here, the constitutional states limit the local action, and an unfavorable activity persists. When such a general condition is disclosed and it is found that it is working against the patient's recovery, that general condition should be treated. The very first step toward satisfactory results in such cases is, that we recognize this necessity and treat the constitutional states that lie beneath the persistent local affection. When it happens that the correct treatment has been a matter of accident, as sometimes occurs, the relation of cause to effect is not clear, but in general we attempt to repair an injured organ and restore it to use by the measures already cited.

The immediate object is to aid the recuperative power of the system by inducing the most favorable hygienic conditions; to free the injured part as much as we may from any functional movement that can be dispensed with; to improve the general nutrition; to bring the injured part as closely as possible to a state of complete physiological rest; in short, to induce an equal condition of all the parts, not only in power, but also in function. The existence of the organism is threatened by any lack of balance between one part and the other parts.

Fatty degeneration of the heart, which is sometimes consequent upon disease of the coronary vessels, may attack one who in general is active and strong. Such a person, on account of the ease with which he uses his muscles, is far more prone to force his diseased heart to a fatal point, from sheer adynamy, than a general invalid would be. A similar result may be brought about through aneurism. As no chain can be stronger than its weakest link, the capacity of the elastic arterial system to resist distention by the retained blood is lowered to the point of the capacity of the aneurismal sac. Any increase of blood pressure might rupture the sac, with fatal results.

If any person has advanced renal disease, he is much safer if his appetite is poor and he is thus prevented from taking animal food, especially lean meat. Fortunately, the tastes of such an invalid often run toward nonnitrogenous foods. In the case of elderly people with renal disease, a distinct benefit

arises from loss of appetite, which permits the oxidation of the nitrogenized materials in the body, and these are thereby allowed to escape from the system. Should the normal appetite remain, these would accumulate, and either uremia or some other affection, an outcome of faulty metabolism, would threaten. Not soups, beef-tea, and the like, but soft foods, rest in bed, gruel, tea, and arrowroot are the proper measures here.

Wherever the general condition has no bearing on the injured part, while at the same time the part has important physiological functions, fatal or dangerous results may be expected at any moment. When there is incurable disease in an organ whose functions are important to the body, correcting the habits of the patient should be insisted upon, to the end of securing an equilibrium, reducing the general condition to a balance of all parts, to "level down"; for, this method will at least prolong life. And in convalescence from acute disorders in important organs, the relation of the afflicted part to the whole body must be borne in mind, as well as its capacity, its condition, and the danger inherent in a forgetfulness of these relations. In uremic diarrhea, for example, should the condition of the kidneys be left out of the reckoning and the flow be arrested without reopening the normal passage for the excretion of azotized matter, the result would be almost certainly a general explosion of uremia.

In some systems it is inadvisable to attempt to promote too high a general condition. A chronic affliction, hidden in an important organ, may easily be uncovered and prove fatal, especially when the various viscera are involved. If, in fatty degeneration of the heart or in chronic renal disease, the line of treatment for the disease itself should be followed, without reference to the general conditions of the body, the time will come when the oversight will be sadly deplored. To "level down" and to "level up"—the one is as important at times as the other is at other times.

The tendency of a chronic disease to become acute is a matter of far greater importance than the reverse transition. An acute attack on a serous membrane may arise from a condition of chronic renal disease, the serous inflammation threatening to prove fatal. Now, if the chronic condition could have been treated in such a manner as to prevent the acute form, this danger would have been obviated. It is where the chronic becomes the acute that the great danger exists, and,

unless the situation is understood and provided for, the outbreak may come almost at any time. In a case where a victim of constitutional syphilis became a hemiplegic, from a syphilitic tumor in his cerebrum, it is nearly certain that, had the management of a syphilitic cachexia been adequate, the result would have been averted.

In general paralysis, aortic disease, locomotor ataxia, and in many other chronic diseases, the termination is often by inter-

current pneumonia. When these chronic conditions run into a state so seriously acute, the most skilled treatment is usually of little avail.

The true line of treatment of acute affections arising out of the chronic is that of prevention—they should be “treated” before they exist. To this end, the chronic diseases must be studied—their nature, their course, and their outcome.

(To be continued.)

Ovarian Inflammation

Its Treatment With the High-Frequency Current

By A. S. TUCHLER, M. D., San Francisco, California

THIERE is nothing which offers such a prolific field to the surgeon as the pelvic inflammatory conditions, and, yet, if the following electrical methods of treatment are made use of, the major portion of these cases can be cured without resorting to the knife.

In a previous article in CLINICAL MEDICINE (June, 1914, page 532), I called attention to the treatment of endometritis, by means of electrolysis, using the direct-current battery. There is nothing in the category of medical science which gives better results in the treatment of these chronic cases than this electrical method. But in the acute cases of an inflammatory state of the organs of the pelvic cavity, such as the ovaries, tubes or uterus, this direct-current electrolysis is absolutely contraindicated. It is here, then, where the application of the high-frequency current can be applied, with astonishing success, in relieving pain, subduing inflammation, and promoting the absorption of the exudates which form as a result of this inflammatory condition. I refer to the Tesla bipolar high-frequency current, which is obtained from the office-cabinet of a high-frequency transformer.

In order to accomplish this result, the current must be of a very high frequency and of a low amperage, so that the electrode may not become too hot and, in consequence, burn the mucosa. The usual high-frequency cabinets on the market are of an extremely high amperage and, consequently, produce a very hot, stinging, burning sensation when the required frequency is developed, so that the insulated glass vaginal electrode can be applied for hardly longer than seven minutes at a time, and this period is not long enough

for obtaining the proper results. I have had the unfortunate accident happen to me, of breaking two insulated vaginal glass electrodes while in the vagina, by using the current from the ordinary high-frequency cabinet, the heat or amperage of which could not be kept under control, nor properly regulated. Nor, for the same reason, can the portable high-frequency machine be used for this purpose.

The high-frequency battery illustrated herewith was, therefore, made so as to obviate such accidents and to obtain the proper results. It will give the very highest frequency, with just enough warmth to be comfortable, in one-half hour's treatment. The amperage of this machine is under perfect control, so that the high-frequency penetration and heat can be regulated to the requirements of the treatment. This, therefore, can be given daily for one-half hour, with resultant relief from pain and, yet, absence of any danger of excoriating the mucous membrane. It is my custom, in conditions in which inflammation, pain, and tenderness are present in the pelvic cavity, in connection with endometritis, to administer the high-frequency current daily until these symptoms are subdued, then to follow with the direct-current intrauterine treatment, or sometimes to give both alternately.

In order to make more clear the above statements, the following observations will illustrate the method employed by me.

Illustrations From Practice

Observation 1. Mrs. H., age twenty-eight, family and personal history good. Five years previous to our becoming acquainted, the lady had had severe pains in

the *right* ovary, as a result of indiscretion during a menstrual period, which always had been a source of annoyance and pain since then. She was advised to undergo an operation for the removal of the tube and ovary, her condition having been diagnosed as an inflammation of these organs, associated with adhesions, the latter the result of this long-standing inflammatory condition. However, she had refused to submit to any operation.

When I first saw the lady, I found that she was suffering excruciating pain in the *left* ovary, and that it was considerably enlarged; she also experienced a sense of fulness in the vaginal vault. The uterus was immovable—on account of the adhesions—it was retroverted, and the cervix was turned upward and pressing against the anterior wall of the vagina and bladder, thereby causing a constant desire to urinate.

The usual indicated remedies to relieve pain, inflammation, and fever were given. Also tampons of 10-percent ichthylol in glycerin were inserted daily in the vagina, and hot applications were made externally. After two weeks of such treatment, the patient was brought to my office daily for the high-frequency treatment.

This current was applied by inserting into the vagina a sterilized glass vaginal insulated electrode up to the tender ovary, and a wet pad was placed externally. These electrodes were connected with the machine, so that this current would penetrate through these organs, the body of the patient not being charged. The glass electrode was attached to the active post of the battery, on top of the resonator, while the moist metal-covered pad was attached to the indifferent post, which was grounded. With this arrangement the patient is not charged, the current being concentrated only where required. The electrodes were placed, on alternate days, on the right and the left side, respectively.

Treatment was given daily for one-half hour, the current being so regulated that only a moderate degree of warmth was felt. After each treatment, a tampon saturated with 10 percent solution of ichthylol in glycerin was inserted in the vagina. The relief of pain was apparent from the start, and after a few treatments she was able to come to the office unassisted. This was continued for three months, when it was found that the organs in the pelvic cavity were in a perfectly normal condition, the uterus was in the proper position, and my patient was grateful in consequence.



High-Frequency Battery

I have observed, in many cases covering a period of three years, that, where the uterus is in the position described in the above case, virtually upside down, it usually will go back to normal position when the adhesions and inflammatory exudates have been removed by means of this high-frequency treatment.

Gonorrhreal Infection

Observation 2. Mrs. W., age twenty, of excellent family and personal history. She had a miscarriage at six weeks' pregnancy, with complete expulsion of the uterine contents. Hardly had she recovered from this experience, when a copious yellow discharge began to show, accompanied by almost constant pains in the organs of the pelvic cavity. A microscopical examination of this discharge was made, and it revealed a gonococcus infection. Her husband had previously applied for relief from this yellow discharge, which the microscope also had disclosed to be of gonorrhreal nature. The woman was

confined to bed, suffering severe pains and hemorrhages. The usual indicated remedies and various other agencies, including the vaccines, were tried for about two weeks, but with unsatisfactory results.

I now insisted that the lady come to the office for high-frequency treatments, but this proved most difficult, on account of the severe pain felt and consequent inability to walk. However, she was brought to the office daily for a week, and then she was able to come without being assisted. She received the treatments outlined above, and after the third treatment the pain subsided. These séances were continued daily for two weeks, then every other day for two months; and this was sufficient to effect complete relief of all aches and pains. The discharge had ceased entirely, and the woman was able to resume her usual duties, and feeling fine, as she said. A microscopical examination of the discharge made near the end of the treatment proved it to be entirely free from the gonococcus bacillus.

Subinvolved Uterus and Infected Appendages

Observation 3. Mrs. B., age twenty-two, family and personal history good. She had not been well since the birth of her baby, two years before; since that time had always had an enlarged abdomen, pain in the right side over the location of the appendix and ovary, and there was a copious yellow discharge. The latter would cease entirely at times, then, after severe pains and chills, it would again flow profusely. She refused to undergo an operation for the relief of this condition.

Examination revealed a subinvolved uterus, tender ovary and appendix, and a thickened fallopian tube that contained an abscess cavity. She applied for relief by means of the electrical methods, absolutely refusing to submit to an operation. I told her that electrical treatments might make necessary immediate operation, but she was perfectly willing to have this method tried before submitting to the knife.

On account of the perfect drainage through the uterus from the fallopian tube, the direct current was used; this being advisable because of the subinvolution and also in order to promote the evacuation of the abscess cavity in the tube. A negative wet pad was placed on the abdomen, the positive copper amalgamated electrode was inserted into the uterus, and then a current of 5 milliamperes was passed for twenty minutes. This

was repeated on alternate days. The high-frequency current was employed on the intervening days.

After the second week of treatment, the pus discharge gradually became less; however, a severe hemorrhage now took place, which required the most strenuous treatment. The patient was in bed five weeks before the hemorrhagic condition finally subsided. However, the pains in the ovary and appendix still continued. As in the previous cases, she was brought to the office, daily, for high-frequency treatment, as heretofore outlined, and after three months she was discharged, perfectly well.

It is well to mention that in observations No. 2 and No. 3 there was good drainage through the uterus from the fallopian tube, and it was in consequence of this that I felt encouraged to try to save these patients from going on the operating-table. Had the opening from the tube been closed, and, hence, the pus sealed up, it would have been impossible to cure them except by surgical interference; for, an operation would have become imperative after but a few electrical treatments. Such has been my experience, and also that of other observers who are using this modality.

As to the first case cited, that of Mrs. H., it is now three years since the lady was discharged as cured, and she has been and is in perfect health since then, not feeling an ache or pain, whereas before the treatment every move was painful and her menstrual periods were a torment.

In a résumé of the above experiences covering a period of about three years, the following conclusions are arrived at:

Conclusions

An operation for ovarian inflammation and for congestion of the organs of the pelvic cavity can be avoided if the high-frequency bipolar Tesla method, as here outlined, is employed.

This result can be accomplished only if the adhesions are not too extensive or too dense.

Congestion of the ovaries, when complicated by the presence of pus in the fallopian tubes, but where good drainage is present, need not lead to an operation, if treatment with this high-frequency method is adopted.

In any event, this method of treatment should be tried and faithfully carried out before an operation is finally decided upon.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

AMONG the diseases which give the general practitioner undue trouble, cystitis unquestionably ranks high. In the first place, patients do not, as a rule, consult their doctor relative to disorders of the urinary apparatus until the discomfort becomes unbearable, and even then they either object strenuously to thorough examination or (as frequently happens) the doctor himself is unprepared to carry out the procedures necessary for a clean diagnosis. Consequently, erosions of the deep urethra, prostatitis, vesiculitis, simple catarrhal cystitis, other, more serious, vesical infections, and even severe forms of pyelonephrosis are treated "on general principles"; the doctor merely prescribing some urinary antiseptic (most commonly hexamethylenamine), and copious drinking of water; besides, sometimes, certain dietary restrictions. In the more advanced cases, vesical irrigation is carried out; but even here the execution very often is so imperfect that the last state of the patient is worse than was the first.

So, the subject of some easily controlled disorder of the bladder goes along, growing worse from week to week, until at last he seeks the advice of a specialist or, less fortunate, falls into the hands of some advertising quack. Whichever it be, such a patient parts with a large sum of perfectly good money that, in part at least, properly should and actually might have gone into the pocket of the family doctor, as deserved compensation for really effective aid rendered.

In these days of parcels post and accessible, thoroughly equipped laboratories, it is quite unnecessary for the busy physician to be a skilful uranalyzer. He should, it is true, be prepared to make the more ordinary tests, and ought to do so; however, very few can afford to devote the time for a full routine chemical and microscopical examination of urine, while some even can not spare the money for the apparatus. Still, every practitioner must train himself to go over the patient with extreme care, and not only must know just what to look for, but must also be able to recognize any conditions that may present themselves unexpectedly.

For example, it will be quite useless to give urinary antiseptics to a patient having a vesical polypus, nor will massive doses of urotropin control even a simple infection of

the bladder if the urine remains distinctly alkaline. To attempt treatment of a supposed cystitis while failing to establish the existence of prostatic hypertrophy, means to invite defeat; and, moreover, one takes money that has not been earned.

Altogether too frequently one hears expressions running somewhat like this:

"O yes, Doctor So-and-So is mighty good when it comes to bringing the babies, but, somehow, he doesn't seem to be able to hit one's chronic trouble. I treated with him for 'most a year for my bladder, and was worse off then than when I started in. So, I thought I'd go to the city, and there I saw a chap at the hospital, and he stuck in a lit-up hollow tube with a looking-glass on it and looked right into my whole waterworks. Took him about an hour to find just where the leak was, but he struck it all right, and fixed me up in less'en a month. But I had to pay him \$200 for the job—half cash down before he'd even look at me. But, then, I s'pose it's worth that to me, anyhow."

Just such cases occur many, many times a day throughout the land, and by reason thereof a few "chaps in the cities" wax rich, while the income of the "home physician" grows "small by degrees and beautifully less." The main object of this article is, to correct this state of affairs as far as possible, by pointing out succinctly just how the doctor may help—and thus hold—his cystitis-patients.

First and foremost, it must be remembered that without initial *congestion* the active cause, bacterial *infection*, could not exist. Such vesical congestion may be quite superficial or it may be deep-seated, and produced by any one of a score of causes.

For instance, pressure or a blow over the bladder may set up inflammation; the prolonged use of alcohol or the ingestion of certain medicinal agents will produce congestion of the mucosa. A true toxic cystitis from the action of such drugs as mercury, silver nitrate, oil of turpentine, balsam of copaiba, phenol can usually readily be recognized. In obscure cases, however, it is always well to ascertain definitely whether any of these or similar agents have been used.

Not a few troublesome attacks of cystitis are set up by the voluntary retention of urine. Overmodest women (and even young men),

through inability to retire unobserved, sometimes allow their bladders to become unduly distended, with the result that, when the viscus finally is emptied, the blood-vessels, suddenly relieved from pressure, become congested; and then the always present bacteria find a soil favorable for their propagation.

Retention due to obstruction, whether of the urethra or by an enlarged prostate gland, is a still more frequent cause. Here, a more or less severe infection usually occurs quickly.

It must be borne in mind, however, that the mere fact that there is pain in the bladder region and pus present in the urine does not necessarily point to the existence of cystitis. The pain of proctitis, prostatitis, even of mere congestion or erosion of the deep urethra, may be referred by the patient to the bladder, while the pus may be of urethral or of renal origin.

Partial retention of urine, with its necessary decomposition, is a very frequent cause of cystitis, as is the presence of calculi. Vesical tumors and tuberculous lesions may easily set up cystitis, and such will yield only to surgical procedure. Somewhat more amenable forms follow pressure or pulling upon the bladder-walls by intrapelvic or abdominal growths. Getting wet or exposure to extreme cold, especially of the pelvis or lower extremities, often causes congestion, as, too, will the passage of highly irritant urine such as occurs in oxaluria, uricacidemia, and so on. Now and again the initial congestion can be traced to sexual excesses.

First—Find the Cause

It is quite apparent that in every case it is desirable to recognize the predisposing cause; while in most instances one must correct or remove it or, where that is impossible, modify as much as possible the resultant condition. For example, it would be quite useless to irrigate the bladder and administer urinary antiseptics when the cystitis is due to a collection of pus behind or in front of the viscus or to the presence of adhesions or other anatomical faults.

Further, it is essential that the invading bacteria be identified and if possible (as it usually is) the direction of the infection ascertained. The principal offending microorganisms are: the colon-bacillus, the staphylococcus, streptococcus, gonococcus, pneumococcus, tubercle-bacillus, and the urobacillus liquefaciens septicus. In the great majority of chronic cystites, a mixed infection (colon-bacillus, streptococcus, and staphylococcus)

exists. Rarely (and then usually in women or children) the bacillus coli alone can be discovered.

The Facts About Colicystitis

This latter form of the disease (colicystitis) has, until quite recently, received little or no attention, the majority of textbooks failing even to mention it. Nevertheless, the doctor whose work lies chiefly among children must have encountered more than one case and, while labeling it cystitis, wondered just why the disorder assumed such peculiar aspects and what caused the intermittent fever, which persisted despite ordinary treatment. English practitioners speak of cystopyelitis and consider that, while the bladder is primarily infected, the renal pelvis becomes involved later on in some cases, the kidney structures generally, when all the symptoms of pyelonephritis present. As a matter of fact, the "primary invasion of the bladder" is fairly common; but, so far as my own observation extends, an ascending infection is of rare occurrence.

A pure colicystitis is due to the invasion of the vesical mucosa by the bacillus coli communis. It is liable to appear after an attack of enteritis, and Trumpp has suggested that the bacteria migrate through the short female urethra; however, as we know that males also become similarly affected, it is more probable that entrance is gained through breaks in the mucosa of the intestine.

Mild and Severe Types of This Form of Cystitis

The disorder presents itself in two distinct forms, one mild, the other severe. In the first, or mild, variety, the systemic disturbances are but slight, the vesical spasms are fleeting, and the train of symptoms disappears in two or three weeks under the free use of antiseptics. The urine, which when voided shows an acid reaction, is flocculent, contains albumin and bladder-epithelium, and upon standing turns dark, appearing almost like beef-juice. At this later stage, bacteria abound in the urine, while vesical tenesmus is severe at urinating; also, considerable tenderness of the bladder to pressure is exhibited. Under rational treatment, the urine begins to clear up in a few days, the temperature gradually drops, and recovery ensues.

In the *severe type* (which may follow the former) persist for months, all the symptoms enumerated appear aggravated and the health of the patient gradually declines; it is even quite possible the kidney to become involved, when it constitutes the *cystopyelitis* of English

writers. The urine in such cases emits a very fetid odor, contains pus and a large amount of albumin, and on standing becomes almost opaque. Anorexia at this time is pronounced, any food taken being vomited almost immediately. Diarrhea is also likely to add to the discomfort of the patient. It is not improbable that the disorder may run a latent course, possibly being revealed only by chance, as through examination of some cachectic patient recovering from enteric disorders.

Pathology and Treatment of Cystitis

In the early stage, treatment is promptly effective and usually even the most pronounced symptoms can be controlled and dissipated in two or three weeks. A bacillus coli-bacterin should be administered as soon as the diagnosis is made or even if the infection is only suspected. Begin with a good flushing out of the colon. Then carefully cleanse the external genitalia, after which irrigate the bladder with 4 to 6 ounces of a warm solution of lysol (1-4 percent). Tricresol and antinosin (1 : 1000) also are quite as effective—the latter I prefer in the early stage. Repeat this procedure daily, seeing to it that the solution is retained in the bladder for a few minutes.

Arbutin and hexamethylenamine should be given in alternation, a dose every three hours, 1 grain of the first and 2 1-2 to 5 grains of the latter. The hexamethylenamine and acid sodium phosphate compound tablet most satisfactorily meets the requirements. A daily saline laxative is beneficial. About an hour after each meal 5 grains of the compound sulphocarbonates, with plenty of water, should be administered to secure intestinal cleanliness; moreover, the sulphocarbonate eliminated through the kidneys exerts a beneficial action. In the worst cases, 1 grain of methylene-blue may be exhibited four times daily, for two days, and then salol, 1 grain, alternated with the hexamethylenamine compound. Hydrastine hydrochloride, 1-32 grain, and arbutin, 1-3 grain, should be given three times a day, and continued for some time after normal conditions are restored.

In considering an ordinary attack of cystitis, it is necessary to ascertain whether the infection occurred either (1) by the descending route—from the kidney, (2) by the hematogenous route—through the circulation, (3) by the ascending route—through the urethra, or (4) by direct entrance from adjacent organs. When a suppurative process exists in the kidney itself, the secondary

cystitis is comparatively of little importance, but pus-producing germs may pass through a healthy kidney without affecting it in any way, and yet set up an infection of the bladder. Here, unless the remote source of the microorganisms can be ascertained, treatment, to be effective, must be directed almost entirely toward the bladder.

In gonorrhreal cystitis in the male, we know that the Neisser bacillus has ascended from the urethra; in females, there is a chance of the infection occurring by direct entrance from adjacent pelvic organs. In not a few cases, I have found an intractable cystitis to disappear coincidently when an existing proctitis under treatment was cured.

These facts are presented, not because they are at all new, but in order to impress the basal truth that there can be no routine treatment for cystitis; rather, the affection calls for the most careful diagnostic work and a nicely balanced and diversified therapy.

It is out of the question here to consider fully the pathology of cystitis. Suffice to say that in the *acute* form the inflammatory process usually begins in the neighborhood of the trigone, but very shortly the entire mucous membrane becomes involved; and erosions and small ulcers develop, chiefly in the vicinity of the vessels about the vesical neck.

Those familiar with the appearance of the normal bladder are prone to be completely discouraged when they first observe through a cystoscope the changes brought about by a cystitis of long standing. The mucosa, instead of being pink, is of a gray or even yellowish color. The vessels stand out like cords and trabeculae and diverticulae (some containing calculi or mucopus) are abundant. The wall itself, as a rule, is greatly thickened, consequently, the capacity of the bladder materially reduced. In some paralytic and in all obstructive cases of cystitis, the viscus is dilated. As in acute cystitis, erosions and ulcers are usually present. Not infrequently more or less extensive sheets of a pseudo-membranous formation are seen adherent to the bladder-wall.

In so-called *interstitial cystitis*, the inflammatory changes extend deeply and the bladder is markedly shrunken. In this form, abscesses not infrequently form and rupture into the viscus, causing a sudden marked pyuria or even setting up a severe pericystitis.

In gonorrhreal cystitis, as a rule, the lower quadrant of the bladder is alone involved.

[To be continued.]

Quinsy, or Peritonsillar Abscess

By E. HARRISON GRIFFIN, M. D., New York City

WHAT is the trouble? How long have you had it? These were two stereotyped questions I asked every patient with a sore throat that applied at the old Outdoor Throat Department of Bellevue Hospital. If he mumbled some words in answer to my question and in so doing showed an inability to open his mouth, or tried to save himself pain in doing so, I knew at once that I had to deal with a case of quinsy, or, peritonsillar abscess. For, this inability to open one's mouth is a certain sign of quinsy. In diphtheria, follicular tonsillitis, croupous tonsillitis, tuberculous conditions, and syphilitic ulcerations of the buccal cavity, this particular symptom is absent.

The temperature in quinsy ranges from 100° to even 104° F. The pain at the angle of the jaw, shooting up the side of the face into the ear and restricting the movement of the jaw, is the external symptom.

In examining the throat, he is a wise practitioner who looks at quinsy simply as an abscess of this region, and one that should come to a point inside of a few days. This is true of every quinsy of a pure rheumatic type; and over eighty percent are of this kind. If pus fails to show at this limit of time, we are dealing with a quinsy of a gouty type. I have opened quinsy swellings so thoroughly that I could pass the probe through from one opening to another and yet fail to find pus. The parts were hard to the touch, and the edges of the cuts were distinct and indurated. This is the picture of a gouty quinsy.

In rheumatic quinsy the finger can generally map out some soft place in the course of twenty-four or forty-eight hours after the initial chill. The progress of the disease is quicker, and the denouement, the opening either by the knife or nature, much shorter.

It is very essential to make the differential diagnosis between a rheumatic and a gouty quinsy, as in one the excessive pain of this affection is short, while under improper treatment the gouty is prolonged for days or even weeks. A gouty quinsy very seldom suppurates; if it does, it is only after a prolonged period.

The treatment: The bowels should be kept well open during the attack. Also, a nightly dose of 10 grains of quinine should be given, in pill form, if the patient is able to swallow, or in solution, if he can not take a pill. Also

10 grains of salicylate of sodium may be given every three hours, in plenty of water. Scarring the surface of the inflammation with a small bistoury, by causing the escape of blood, often gives relief before the pus has formed. The throat should be examined, at each visit, with the aid of a strong light. The fingers should be used at each examination, to detect the early formation of pus. Time should be taken in this examination, and pus should be liberated as early as possible, for the comfort of the patient.

The parts can be soothed by the application of a 10- to 20-percent solution of cocaine, to be rubbed over the surface of the membrane with a wad of cotton fastened to a probe. The operation is painless and the relief afforded is beyond description. The worst case of quinsy I think I ever treated was the following:

A woman applied at the Bellevue Dispensary for treatment. She had seen a physician previous to this visit, who had diagnosed her condition as hypertrophy of the tonsils. He had removed part of the tonsil. When she applied for treatment, it was only with greatest difficulty that she could breathe. Her mouth was tightly clinched and I was only able just to introduce a knife between her set teeth, and had to grope in the dark for the locating of pus, but finally was able to strike it. The pus flowed out in abundance, and the patient left the clinic, able to open her mouth wide. She was able to eat a meal for the first time in a week. An operation on the tonsil under these conditions was positively not indicated and might have led to serious results. There had evidently been a mistaken diagnosis.

Quinsy is no discriminator as to age. I have seen it in a baby of two months and in an old man of eighty, both with initial attacks. I have seen one attack of quinsy follow another, year in and year out, until the throat-membrane had had a thorough treatment and the patient's system had undergone thorough medication. Then these yearly attacks have stopped and the patient has been free from his yearly quinsy.

It is always wise to start in with a 5-grain dose of calomel, followed six hours afterward by a large saline purgative. A 10-grain dose of quinine may be given, with benefit, with the calomel. If this does not abort the quinsy, we have to deal with the stage of

suppuration. This is hastened by directing the patient to steam his throat continuously with the aid of the kettles that are common on the market.

Some years ago, I was called to see a patient in consultation at the Hospital for Deformities and Joint Diseases. The patient was a well-developed woman who gave a history of quinsy. She had been ill for over a week. The quinsy had been opened thoroughly and properly; still, she was unable to take food or leave her bed. She had had a temperature of about 103 degrees. With difficulty I passed my finger into her mouth, trying to feel if there was any point where pus might be present. The whole part was one large, hard mass; there was absolutely no spot where pus might be hidden.

I prescribed a purgative, to be followed by a saline in the morning; also 20 drops of wine of colchicum to be taken every three hours, in water. Upon my visit the next day, I found the patient sitting up in bed. The fever had disappeared and she was able to open her mouth to the normal extent. The following day she called at my office to receive treatment. My first visit was on a Friday, my second on a Saturday, when she was out of bed and well, and Sunday the patient was at my office. The result in this type of quinsy I attributed to the diagnosis of gouty peritonsillitis.

These two cases are only two of hundreds in which I have used this drug—that is, colchicum—with most gratifying results.

In treating quinsy, one should not be satisfied with a single method. One should go into the history of the case, find out how many attacks the patient has had, and be sure to make a differential diagnosis between rheumatic and gouty peritonsillitis. One should find the site of the pus and open the abscess as soon as possible, and keep the part open until the wound granulates from the bottom. The cavity should be washed out, with a small syringe, with a 25-percent solution of argyrol (which is better than iodine); and this should be continued till the wound has granulated. If this is done, the patient will be less liable to a return of the quinsy.

After an attack, the patient should be placed under proper medication, to prevent the yearly return of the affection. His urine should be examined in every case. Albumin is generally present during an attack, but disappears after convalescence. Do not be satisfied with the statement that the patient has had his yearly quinsy for ten or twenty years and that his father before him had his quinsy. Look for the cause and correct it.

Block, of Brooklyn, finds a hereditary factor in separation, desertion, and divorce, and states that these run through families. I believe this is so; but the cause of quinsy can be found, and the hereditary proclivities eliminated if the disease is individually studied, and if the patient follows systematically a prescribed treatment for this very painful and, in some cases, dangerous ailment.

I AM more powerful than the combined armies of the world.

I have destroyed more men than all the wars of the world.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over \$300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike; the young and the old, the strong and the weak, widows and orphans know me.

I loom up to such proportions

that I cast my shadow over every field of labor from the turning of the grindstone to the moving of every train.

I am relentless. I am everywhere—in the home, on the street, in the factory, at railroad crossings, and on the sea.

I bring sickness, degradation and death, and yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but take all.

I am your worst enemy.

I AM CARELESSNESS.

—George W. Burr.

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—This is the tenth instalment of Doctor Gray's remarkable autobiography, in which he gives an intimate record of his adventurous and romantic medical career, beginning in our own South before the War and now continuing, as it has for years, in the most tropical and pestilential portion of Mexico.

[Continued from page 1121, December issue.]

Magic Podophyllin

I HAD a peculiar case in a ranchman, with double pneumonia, few years since, whom I visited on a Sunday morning. The case seemed utterly hopeless; and I refer to it because it developed a revelation that might not have been known to this day, if ever.

When I was a boy, podophyllum decoction was the slave purge on the plantation of my people; and it got into European medicine as a vegetable calomel—which it really is in a high and an innocent degree. I had the esinoid prepared in a compound, as follows:

| | |
|----------------------------|----------|
| Podophyllin res. | gr. 1-2 |
| Hyoscyamus nig. | gr. 1-8 |
| Extract nux vomica. | gr. 1-16 |
| M. Ft. one pill or tablet. | |

Two of these pills were a full adult dose, under current textbook authority, and this I have never ventured to exceed. I left 20 of them with the ranchman, to take 2 every night. Also I gave him some aconitine granules, with special instructions, as another visit was impossible before the next Sunday; being satisfied that he would not live twenty-four hours. The next Saturday afternoon, I went to the office of vital statistics, to look for the record of his death; which, though, did not appear. Hence, I went to his ranch early Sunday morning, and was astounded to find him weeding his garden.

As soon as I was out of the house, at my first visit, he told his wife that I knew he was doomed to die; and that, if those little black pills, 2 every night, would help him in any degree, all swallowed at once would do much more good or quickly put him out of his misery. The wife protested. But he had the little fellows in his hand, thrust them into his mouth, and down they went. In less than an hour, he was vomiting violently, and then purging a few hours later as if he had a gallon of castor-oil in him; the two operations continuing till the next day, when he was completely empty. But his cough and fever were gone. He took the aconitine the next day and subsequently, having a sufficiency of excessive dosage.

The incident started me to experimenting, gradually raising the authorized dosage till I found safe effectiveness in adult dosage for strong men from 8 pills or tablets; strong women, 6; less proportionately for feeble adults and others under 16 years. Now thousands of persons annually use the substance under that scale of dosage, in this district, and I have published it, in medical journals and otherwise, far and wide. I have known of two persons having taken 18 tablets by mistake, this quantity having been supplied, each of them to take 8 one night, and 2 each for the five subsequent nights. The 8 were taken, and soon after some other party gave the 10. Both cases were chronic rebellious malaria; and the effect practically was the same as with the man who took 20 of the pills; there was no more malaria.

Clean Out and Keep Clean

I give the substance thus for an active purge; and, when the case is not too urgent, one tablet every half hour is my favorite method, till the dose is complete. At night, is the proper time to take such purge, or even calomel, so the patient will not be eating afterward, which is detrimental. I use the compound pills, 1 or 2 tablets at night, as a hepatic adjuvant; they also tend to assist the stomach and the small intestines in labored digestion. I give even 1-20 of a grain at night for months in the treatment of anemia.

I have now dispensed, for many years

| | |
|----------------------|-----------|
| Calomel. | gr. 1-6 |
| Podophyllin. | gr. 1-6 |
| Bilein. | gr. 1-8 |
| Strychnine arsenate. | gr. 1-250 |

in tablet form, for certain complications, in which I get good service.

I have found that nearly every physical distress I am called to combat originates from derangements of the liver and the stomach, although it be of virulent germ characteristics, which cannot develop in a normal system. I must have had disease-germs in my system a thousand times, sufficiently numerous to have infected many people with systems vitiated in a degree to be favorable

culture-fields; yet, I was never sick, because never below normality, to enable the invaders to propagate. I have seen other persons thus exempt, even natives down here, who had no subnormal defect to nourish infection. Natural man is immune from disease-invasion. Man becomes unnatural by vitiating the liver and stomach till he sinks to subnormal impotence, unable to resist invasion; and that deplorable state supervenes from imprudent eating and drinking, and permitting indigestion to superinduce costiveness, when hereditary taint is not the defective bequest. There are so many causes here that I long since abandoned the pursuit of antecedents, and strive to cope with what exists.

I begin my assault on the invaders in their strongholds of the liver and stomach, the alimentary canal being dominated by the stomach, and very naturally participates in whatever medication that may be introduced. And I have found that nothing short of heroic purges, such as I have indicated, or calomel, followed by castor-oil (unsafe in this climate), and glycerin enemas or suppositories (the latter, however, being too expensive for plantation work), are the primal stepping-stones to successful medication. The saline purgatives are serviceable the mornings subsequent to night-purges, in certain cases, not needed in many. Such salts and castor-oil, either in single dosage, though, fail to cope successfully with stubborn biliousness of malarial fever; and the loudly bruted pills from the United States and elsewhere, claimed to be specifics in the work I have to do, were practically worthless in my hands; in fact, I have found no patent medicine worth the empty flasks that contained it, in any applications I have met, where claimed to be all-powerful.

The obstructions of the liver and stomach once cleared away, other medication exercises a magical influence, which would have been practically *nil* with inadequate elimination and washing-out of the toxins. The debris of fetid excrement sticking to the surface of the walls of the colon and rectum often superinduce a return of abated fever, which necessitates frequent washing out. I usually employ normal salt solutions among the plantation people; probably as good as the high-toned preparations that I use among the rich. But you all have more free negroes on plantations and in the small towns of the southern states than there are peons in all of Mexico; and your colored contingents are vicious, filthy, and shiftless in a degree, as low as the bottom strata of humanity here.

Hence you really need quickly acting heroics in the treatment of them.

Aconitine Experience

I had a typical aconitine experience here at home last year. I gave the mother 24 teaspoonfuls of a solution, telling her to give her little girl one every fifteen minutes, and that by the time she had taken four or five I should return. I was in the house just before time to give the fifth dose and found the child vomiting as if she were doubly seasick. She calmed directly, when the mother asked if she must continue the dosage; that, if so, it was nearly used up.

That surprised me, as there should have been 20 doses. I asked her what she had done with the medicine. She said she had given the child four spoonfuls four times—16 doses in three-quarters of an hour. I stopped the dosage and gave no more medicine that day, as there were no symptoms of aconite-poisoning. The fever was gone when the emesis ceased, and did not return. Prompt and active vomiting certainly saved her life, as the dose would have been lethal had it remained; and the doses had been ingested at such short intervals that it was tantamount to having taken all at one time. But I have shied clear of experimenting on that line.

Obstetrical Notes

I have an important practice with young mothers whose lactation is defective; and have not failed in a single case to secure them a liberal supply with pilocarpine—maybe not known to some young practitioners.

I have never had any regular obstetric practice, though amply instructed to have been at least practical, that work here being the right of midwives; and a very light task, as a rule, the dance frequently being over when the mystic woman arrives, although she was called at the first symptom of labor-pains. And I have seen the mother of a babe born at midnight in the kitchen, at sunrise the next morning getting breakfast ready. But they get stuck, sometimes, and have to yell to me. I have the very best of all the ergot derivatives that have appeared, which usually gets them out of the woods, where there is a suspension indicating such application. But when there is a serious unnatural complication, requiring to be manipulated by painful and even perilous force, the poor midwives are all at sea, in deep muddy water. I give the poor sufferer an anesthetic, and show and help the distressed midwives out of their

difficulties. It is only in such cases, when the ergotin fails to act, that I am ever present.

While entangled in the intricacies of clinical female practice it may be as well to state that apiol gets me out of most menstrual troubles that come my way. But all such cases, as well as the difficulties with labor-pains and false positions of the child, come from the better classes, not the peon, or Indian, element. I now recall but two such cases calling for help from me in twenty years; and the peon births are about seven to one of the better classes.

I never treat any female diseases apart from gonorrhea and its complications; and most of that is in married women of the better classes, infected by their husbands. It rarely comes to me from peons or Indians.

Hereditary syphilis is immunized in the embryo and fetus by injecting salvarsan, at intervals of eight days between applications, into the prospective mother, 5 to 6 times, fractioned 0.20 to 0.30, up to 0.40 Gram. Then, after a rest of two months, another like series, 0.15 and 0.10 Gram. Renal func-

tions rendering this feasible, the urine should be under rigorous surveillance in all stages of the treatment. And when there is marked intolerance, benzoate or biniodide of mercury should be associated with salvarsan in aqueous solution. *This is often intensely important in curative adult treatment.*

Abortions have not been in excess of those of healthy women undergoing no treatment, and far less than those of syphilitic women under no treatment. There were 75 percent still-births and prompt deaths after birth from syphilitic mothers, twenty months since, according to French obstetric statistics by Sauvage; the same class of mothers now giving 92 percent live and fairly normal births, after the treatment, which should have inception early after pregnancy is declared.

Salvarsan is a high-grade perilous substance, and the fractional dosage should not minimize the caution, the delicate condition of the pregnant woman requiring all the care that full adult dosage demands in regular practice.

(To be continued.)

GRIN*

By ROBERT W. SERVICE

*If you're up against a bruiser and you're getting knocked about—
Grin.*

*If you're feeling pretty groggy, and you're licked beyond a doubt—
Grin.*

*Don't let him see you're funkering, let him know with every clout,
Though your face is battered to a pulp, your blooming heart is stout;
Just stand upon your pins until the beggar knobs you out—
And grin.*

*This life's a bally battle, and the same advice holds true
Of grin.*

*If you're up against it badly, then it's only one on you,
So grin.*

*If the future's black as thunder, don't let people see you're blue,
Just cultivate a cast-iron smile of joy the whole day through;
If they call you "Little Sunshine," wish that they'd no troubles too—
You may—grin.*

*Rise up in the morning with the will that, smooth or rough,
You'll grin.*

*Sink to sleep at midnight, and although you're feeling tough,
Yet grin.*

*There's nothing gained by whining, and you're not that kind of stuff;
You're a fighter from away back, and you WON'T take a rebuff;
Your trouble is that you don't know when you have had enough—
Don't give in.*

*If Fate should down you, just get up and take another cuff:
You may bank on it that there is no philosophy like bluff,
And grin.*

*From "The Spell of the Yukon"

What Others are Doing

TOBACCO AND THE HEART

In the article which follows, we have given an abstract of some clinical experiments made by Dr. J. Aikman, to determine the effect of cigarette smoking upon pulse rapidity and blood pressure. In *The New York Medical Journal* for September 11, 1915 (p. 541), we find another paper upon this same subject, contributed by Robert N. Willson, who cites the histories of two interesting cases of tobacco-poisoning. The first of these was that of a young man a little over 30 years of age who had anemia and suffered from a number of attacks of palpitation, associated with cyanosis, when the pulse rate ran up to 120; there also was a systolic murmur at the base of the heart. Under simple hygienic treatment, with withdrawal of his tobacco, these symptoms disappeared in every instance.

The second patient was a member of Doctor Willson's own family—a man of 76 years. In his case, there was excessively low blood pressure and, what was most significant, an attack of hemianopsia, with an array of paralytic symptoms present more or less for a period of seven years, but, as a rule, clearing up rapidly when the patient stopped the use of tobacco.

Doctor Willson utilizes these cases as a text to demonstrate the disastrous effects which may follow the use of this herb. While personally he knows of no one who actually has been killed by smoking, it is his confident belief that the responsibility for the arteriosclerosis not attributable either to syphilis or old age must be divided between the use of tobacco and the various forms of food-toxemia.

He quotes various authorities to prove that smoking tends to increase the frequency of the heart beat and to change arterial pressure. Thus, to illustrate, he tells how, in 62 separate experiments in this direction, made at frequent intervals, in only 2 of the subjects did the inhalation of tobacco-smoke fail to produce marked blood-pressure changes. Doctor Willson is convinced that most of the cases of angina pectoris are due to the habitual use

of tobacco, and that many, if not all, of the instances of pseudoangina are examples of toxic involvement of the ganglia of the heart or of the nerves of the cardiac plexus.

He also says that he is accumulating considerable evidence which seems to prove that the children of a tobacco-user and his tobacco-absorbing wife also pay a cardiovascular toll, in a tendency to acquiring fibrous and leathery blood-vessels.

THE EFFECT OF TOBACCO-SMOKE UPON THE HEART

If tobacco is an evil, then it is a gigantic evil. Look at these figures: According to John Aikman (*N. Y. Med. Jour.*, Oct. 30, 1915, p. 891), the world's tobacco production of 1912 was 2,835,000,000 pounds. More than 578,000,000 pounds of the weed were consumed in our own country, and the value of the product raised in the United States was in excess of \$416,000,000. This showing places the tobacco-industry ahead of the automobile industry, the baking industry, and numerous other of our foremost enterprises.

Is the smoking of tobacco seriously injurious? Doctor Aikman, after having conducted a rather extensive investigation of the literature and making some personal experiments, positively declares that it is. Thus, for instance, he tried to learn the effect of cigarette-smoke upon 27 young men, ranging in age from 16 to 31 years. In these experiments, the subject sat quietly in a chair in a quiet room, with the examiner, and smoked the cigarette as he was accustomed to do. Tests of the pulse and the blood pressure were made both before and after smoking, great care being taken to exclude all psychical or other influences tending to interfere with the accuracy of results.

The effect upon the pulse, produced by smoking a single cigarette, was marked. Out of the 27 men tested, 16 showed an increase of over 8 beats per minute. Except in 4 of them, the rate was increased, and 2 of these 4 had an abnormally rapid pulse at the beginning. In some cases, the increase in rapidity was spectacular, the greatest

being 24 beats in two and one-half minutes; the average increase being 14 per minute.

The effects upon the blood pressure were not so marked and uniform. Thus, in 25 of the subjects, the systolic pressure fell in 12 of them, in 5 there was an increase, while 18 showed no change. The average gain was 5.8 mm., and the average fall was 6.16 mm.

Doctor Aikman also observed that those who inhaled tobacco-smoke displayed a much more decided response to the tobacco than those who did not. It was also found that cigarette smoking tends to cause irregular action of the pulse.

Doctor Aikman comes to the conclusion, as the result of his own experiments, as well as from the widely conflicting opinions of various other experimenters, that we are far from possessing definite information concerning the true effects of tobacco smoking upon man. However, he personally feels that this narcotic must have played some part in the great increase of circulatory disease witnessed within the last few years, during which period the tobacco consumption has increased so enormously. "Is it not possible," he adds, "that the disturbances of circulation which we have seen produced by a very small amount of tobacco, frequently repeated daily for years, may play a much greater part in the general increase of circulatory diseases than we realize?"

NOVEL TREATMENT FOR ACUTE RESPIRATORY DISEASES

In dealing with acute infectious disturbances of the upper air-passages, says Irving W. Voorhees (*Boston Med. & Surg. Jour.*, Nov. 4, 1914, p. 702), the two remedies most commonly used by specialists are silver, in some form, and iodoform. The former is irritating when strong enough to be effective; the latter, whether dissolved in ether or in oil, is both irritating and esthetically unpleasant.

For some years past, Doctor Voorhees has been securing rather remarkable results in this class of diseases from direct application of such aromatic substances as thymol, eucalyptol, menthol, and the oils of cloves and cinnamon. His favorite now seems to be a solution of menthol in oil, in the strength of from 5 to 25 percent. The applications are made every eight to twelve hours—usually twice a day. If the patient complains of the burning caused, then a few

drops of a 10-percent cocaine solution should be instilled a few minutes before applying the menthol.

In bronchitis, Doctor Voorhees says, it is astonishing how effective the treatment is. It relieves cough, increases expectoration, is antiseptic, while the oil used as a vehicle makes it sedative. Treated in this way, he declares that a case of simple bronchitis (not due to pneumococcus or streptococcus) should not last more than seventy-two hours. Applications are made directly to the trachea with a laryngeal syringe, while the patient exhales and inhales through the open mouth. In acute laryngitis, the drops should fall directly on the rima glottidis during phonation.

In acute rhinitis, the patient is asked to lie down with the head far extended over the edge of a couch, and the drops (usually 5 percent in strength) are instilled into the nose with a dropper, care being taken to point the dropper upward in the direction of the eyes. In pharyngitis, a postnasal applicator is used to apply the menthol-oil solution.

MENTHOL-OIL SOLUTION IN EARACHE

An effective remedy for earache, according to Voorhees, in the article cited just above, is the menthol-oil solution recommended for treating infection of the upper air-passages. In furunculosis of the ear-canal, he packs with gauze soaked in a 10-percent oily solution of menthol.

PHENOLPHTHALEIN AS A LAXATIVE

"I have prescribed rather more than 1000 doses of phenolphthalein," writes J. C. McWalter in *The Lancet* for November 20, 1915 (p. 1141), "and find it probably the most useful laxative in the Pharmacopeia." This certainly is praise unqualified. Doctor McWalter declares that a sufficient dose of phenolphthalein produces loose movements within four to six hours, and this result is obtained without griping or pain. Furthermore, it does not seem to lose its effect by continued use, at least not until it has been persisted in for a considerable time. Its action, he says, is very much like that of cascara sagrada, but it has the advantage of being more active and less griping.

McWalter says that he has prescribed phenolphthalein in many cases of pregnancy, and it seems to him almost an ideal laxative in that condition. This remedy is particularly useful in intestinal toxemia, offering

almost ideal advantages as a medicament in these cases, since it is mildly antiseptic without being toxic or cumulative, while free from irritating action upon the mucous membrane of the intestine.

In cases of mucomembranous colitis, he asserts, phenolphthalein, given in doses of 1-2 grain thrice daily, will be found eminently satisfactory in preventing enterospasm, easing pain, checking excessive secretion of mucus, improving the neurasthenia, and generally improving the patient's condition. He ordinarily administers it in doses of 1-2 to 3-4 grain for children and of 2 to 6 grains for an adult.

SYphilis IN THE ARMY AND IN CIVIL LIFE

There have been all kinds of estimates as to the percentage of the population infected with syphilis. Captain Edward B. Vedder, of the United States Army (whose pioneer work in emetine-therapy in amebic dysentery is known to every reader of this journal), has thrown more light upon the prevalence of syphilis than any man who has heretofore studied it in this country. He has made or caused to be made hundreds of Wassermann reactions upon enlisted men in the army, West Point students, and others.

First Wassermann reactions were made upon 1019 newly enlisted white recruits at Fort Slocum, near New York City, and at Columbus Barracks, Columbus, Ohio. Of these men, it was shown, approximately 16.77 percent were presumably syphilitic. Inasmuch as everyone of these young men presented no apparent signs of syphilitic infection whatever and all were accepted by the medical officer as free from venereal disease, this percentage is certainly remarkably high. Captain Vedder shows, however, that the percentage of syphilis in these young soldiers is undoubtedly lower than in the corresponding civil population from which they were recruited. He estimates that about 20 percent of young adults of this class are infected with syphilis.

The results of the Wassermann tests made at West Point Military Academy are interesting and surprising. The cadets are picked young men, coming presumably from a superior class, corresponding to the class from which the students in our colleges are recruited; and, yet, it was shown that probably 5.46 percent of these West-Pointers were syphilitic. Not one of them gave objective signs of the disease.

The negro recruits were shown to be much more generally infected with syphilis than white recruits, the disease being two or three times more prevalent among the colored enlisted men. The Wassermann tests of 1472 colored soldiers belonging to the 9th and 10th cavalry regiments showed that probably 36 per cent were suffering from the disease. The highest degree of syphilitic infection, however, was found in the Puerto Rico regiment, recruited entirely on the island of Puerto Rico. Of these men, 51.79 percent were shown to be probably syphilitic. Captain Vedder expresses the opinion that this very large percentage of venereal disease on the island of Puerto Rico is very largely responsible for the anemia and debilitated conditions so common among the poorer inhabitants of that island. Syphilis, tuberculosis, malaria, and malnutrition are even more potent causes for ill health among these people than is hookworm-disease.

These statistics certainly indicate the seriousness of the problem of venereal disease in our country. While the white race is much freer from these infections than are members of the colored race, and Americans, in this respect, are far superior to the Latin people, of whom the Puerto Ricans may be considered typical, there can be no doubt that a dangerously large percentage of our people are being continuously undermined in health by the ravages of this secret, insidious, and too generally overlooked plague of overcivilization.

COLIC IN INFANTS

In a preceding number of this journal, attention has been called to the value of an emulsion of mineral oil in the treatment of colicky babies. This emulsion has been strongly advocated by Dr. Eric Pritchard, of London. In a recent communication, referred to in *The Universal Medical Record* for September, 1915 (p. 216), Doctor Pritchard says that in treating these colicky infants he sometimes almost fills their intestines with the petroleum-emulsion, either alone or in combination with bismuth carbonate.

The chief objection to the administration of the bismuth in large doses is, that its gritty properties make it distasteful to the infant. This disadvantage, however, can be overcome by using the preparation known as glycerinum bismuthi carbonatis—a most elegant preparation, of milky softness, the details for the making of which are given in the Codex of the British Pharmacopeia. One, or even two,

drams of this preparation, combined with an equal quantity of petroleum-emulsion, serves as a most efficient carminative for infants troubled with colic. Such a mixture may be given independently or else shaken up with the baby's milk, from the nursing-bottle.

THE ENTAMEBA OF PYORRHEA

Dr. C. C. Bass, of New Orleans, certainly evidences no loss of faith in the specific action of the entameba buccalis—or, as he calls it, the entamœba gingivalis—in the causation of dental pyorrhœa. In his address delivered before the Indiana State Medical Association (printed in its journal for October, 1915, p. 455), he declares that this parasite is present in all pyorrhœal lesions, but invariably is absent from the mouth when there is no pyorrhœal lesion, and that it cannot be demonstrated in the absence of suppurating tissue.

Compared as to size with other socalled microorganisms, Doctor Bass says, the entameba, is "an enormous animal, several hundred times larger than the streptococcus, staphylococcus or pneumococcus. This amebic organism has the power of moving around and under the microscope we can see it passing from place to place. In passing between cellular organisms, it often drags behind itself a mass of bacteria, sometimes several different kinds being conveyed in this way, in and out of the living tooth-structure. In this way, the bacteria are carried deeply into inflamed tissue and the formation of pus is the natural result.

As Doctor Bass says, there is more or less symbiosis between the bacteria and the entameba. It is probable that the bacteria could not get along without the entameba, and vice versa.

This harmful organism is exceedingly common. The number of persons infected with this parasite probably constitutes as high as 95 to 99 percent of the entire population. Infection usually takes place in childhood, probably 50 percent of all persons being attacked between the twelfth and fifteenth years. Infection may be carried in many ways, as, for instance, by the ordinary drinking-cup. Thus, in the home, the parents have the disease and all drink from the same vessel; again, their little boy receives a toy-horn and the mother shows him how to blow it, and then he puts the horn into his mouth, thereby transferring some of the amebas to his own mouth. Kissing is probably a common means.

As an illustration of the possible effect of an uncured pyorrhœa upon an individual's health, Doctor Bass has calculated the amount of pus which may be secreted by an ordinary individual who has 32 teeth. He declares that this calculation shows that during twenty or more years of adult life, no less than 8 gallons of pus is secreted by an individual thus affected.

Doctor Bass is still firm in his faith that in emetine we have a specific remedy for the parasite. "Our knowledge of the disease and of the parasite is so imperfect," he declares, "that our methods of treatment are far from perfect and far from satisfactory. It frequently occurs that a few doses of emetine are followed by entire disappearance of the entameba and of the lesions. They remain absent for variable lengths of time, but, since the source of reinfection is so very great, as everybody else has the same disease and we are constantly exposed to reinfection, the organism appears again after a time. We must know a great deal more about the use of emetine, a great deal more about the manner in which the parasite is transferred from one individual to another, before we can lay down dogmatic rules for treatment and before we shall be able to be perfectly successful in treatment."

PAROXYSMAL CORYZA, AND ITS CURE WITH EMETINE. ENTAMEBA NASALIS

In a paper published in *The Medical Record*, for October 9, 1915 (p. 604), Alexander C. Howe describes a group of nasal symptoms which, he says, for a long time has baffled all attempts at relief. The clinical picture exhibits the following group of symptoms: sudden onset, sneezing, watery nasal discharge, stuffiness of the nose, postnasal rawness, and a sense of chilliness. The attack may last a few minutes, or as long as an hour, and it disappears as rapidly as it comes on. There are no sequels. The subject of these attacks usually is depressed physically and mentally and rarely feels in proper condition for efficient work. Between attacks, the nasal passages rarely feel comfortable.

The beginning of the attacks, generally is ascribed to exposure to drafts, and the patient thinks he is subject to "colds."

Doctor Howe calls attacks of this kind "paroxysmal, or abortive, coryza." In his study of this condition, he has uncovered the interesting fact that more or less extensive pyorrhœa alveolaris is present in the mouth

of practically every patient affected. Not only did he find the distinctive entameba of Riggs's disease in the oral pūs-pockets, but he also succeeded in finding, in the majority of the patients, another, but different, ameba in the nose; this resembling the entameba histolytica of dysentery more than the entameba buccalis. He calls this the entameba nasalis.

Doctor Howe describes a large number of cases of paroxysmal coryza, 15 of them in detail. These fall into several classes, according to the associated complications. It is interesting to learn, however, that in the majority of instances he was able to effect a cure of the disease with the aid of emetine. For instance, in his first class of uncomplicated cases, consisting of 23 patients, all but 3 were entirely relieved of the general nasal symptoms by emetine treatment. In the 3 cases unrelieved, the patients suffered little if any, from disease of the mouth. Even in cases complicated with sinus disease, or with some serious general condition, relief usually followed the emetine treatment.

ALUMINUM-ACETATE APPLICATIONS FOR SMALLPOX

Some remarkable results in the local treatment of smallpox are recorded by Ferdinand Traeger, of the municipal hospital of Kaaden, Austria, which certainly deserve attention at the hand of those who still may happen to encounter cases of developed variola. The remedy referred to is a solution of aluminum acetate in alcohol (*spiritus vini rectificatus*, of the German Pharmacopeia, of 60 percent by weight), a preparation of late years grown in favor among physicians of Germany and Austria-Hungary—especially during the present war—and already alluded to in this department, as an antiseptic and antiphlogistic dressing for wounds, particularly purulent ones. It was his familiarity with its excellent action on infected wounds that prompted Doctor Traeger—as a sort of happy inspiration—to give this aluminum-acetate lotion a trial when a smallpox-victim (the fourth or fifth in an incipient epidemic started by a soldier) in the suppurative stage and very ill came under his care.

For years, Doctor Traeger writes (*Ther. d. Gegenw.*, May, 1915, p. 200), he had been employing this popular agent and had attained many a fine result, and it suddenly occurred to him that, if embrocations with it are capable of healing abscesses and causing to disappear inflamed lymph-glands of hazel-

nut size under the thick cutis, it ought to act still more effectually upon the variola-eflorescence covered merely by a very thin epidermis. So, he ordered the solution of 5-percent strength. Pads, or compresses, of soft cambric ("Billroth batiste") were made wet with the liquid and placed over the erupted areas and allowed to remain three hours; beginning with the face, first of all, then in rotation, these wet compresses were applied successively to the chest, the abdomen, and the dorsum.

[More than likely the author means *solution* of aluminum acetate of the German Pharmacopeia modern medical writers are so very careless in their use of language. This solution also is known as Burow's liquor (pronounced Booroff), after its sponsor, Karl August von Burow, German surgeon, who died in 1874. Formulas will be found in the National Formulary, U. S. Dispensatory, and Standard Formulary. Ed.]

Already the following day a marked improvement in the patient's condition was discernable and her temperature had abated considerably. On the second day, the pustules had lost their glistening appearance; on the third, they had visibly shriveled; and on the fourth many of the eruptions had disappeared; in the further course of a few days, nothing remained of any of the fully developed pustules but livid spots on the skin, not even crusts having formed.

Meanwhile the malady had broken out in the local orphan-asylum, 13 boys and 1 girl coming down within two days; all but 3 of the attacks being severe in nature, a few even of the confluent type. Here, too, the outcome of the aluminum-acetate embrocations is pronounced by the author as having been "brilliant." The fever, in some attaining to 39.5° C., disappeared in the course of two days, the eruptions devoluted in precisely the same manner as in the woman first so treated, leaving no scars except slight ones in a few. The clouded mind (in some of the children) became clearer by the third day, while the next day these greeted the Doctor with a cheerful welcome. This report was written when even the 9 very sick children had almost recovered, the pustules having healed mostly without leaving scars or a trace of crust, excepting for small ones here and there in a few of the cases; only one child showed a single depression, the size of a millet-seed, in the face.

Doctor Traeger emphasizes particularly the fact that these applications exerted a direct soothing effect upon the pain and

itching of the sores; only perhaps at the start some slight burning sensation being experienced from the lotion. Indeed, the little sufferers, even the youngest, would call for these dressings.

Thus, then, Doctor Traeger concludes his note, there is presented to the medical profession, in the alcoholic solution of aluminum acetate, a remedy—where now we have none such for this disgusting malady—that combines in itself a number of most valuable properties; it is extremely simple and economical to use; it quickly allays that pain and terrible burning; it rapidly reduces the temperature to normal, simultaneously improving general wellbeing; it influences the retrogression of the pustules as does no other known agent; above all, it obviates pitting in most instances, but, at all events, it leaves fewer and lighter scars in the face.

CAMPHORATED WINE AS AN ANTISEPTIC VULNERARY

In connection with the foregoing item, the following abstract from a statement contained in a private letter of Richard Koch (in charge of a German reserve hospital) written to one of the editors of the *Therapeutische Monatshefte* (March, 1915, p. 175) will be of interest.

He does not give his reason, but Doctor Koch simply tells his friend that, in place of the widely employed aluminum-acetate vulnerary [see *ante*], he has been using—on a large scale, naturally—as a dressing for infected wounds the camphorated wine of the German Pharmacopeia. The "Standard Formulary" reproduces the formula for this vinum camphoratum in avordupois proportions, as follows:

| | |
|----------------------------------|----------|
| Camphor..... | grs. 290 |
| Alcohol..... | fldr. 6 |
| Mucilage of acacia, U. S. P..... | floz. 2 |
| Sherry wine..... | floz. 29 |

Dissolve the comminuted camphor in the alcohol. Slowly mix the mucilage with the wine. Then gradually and with constant agitation (to prevent precipitation of the acacia by the alcohol) add the camphor-spirit to the wine mixture. (Stated relatively, the proportions of the ingredients, by weight, are: Camphor, 1 part; alcohol, 1 part; mucilage of acacia, 1 Ph. G., 3 parts; white wine, Ph. G., 45 parts.)

The writer of the letter then comments, saying: "It is not as generally known as it ought to be that camphor in this combina-

tion constitutes a wound remedy of most remarkable virtue. Under its influence, the edges of a wound do not present that pale, tumid appearance observed with other moist dressings; rather, when the skin still is vascularized, it has a normal pinkish color, the granulations are large and fresh-looking, the wound cleans up at a remarkably rapid pace, and, moreover, the pain is wonderfully soothed a fact highly appreciated by the suffering victims. In view of these facts, ought we, perhaps, not to devote closer attention to the local action of camphor?"

This last remark undoubtedly deserves consideration; still, there presents itself the other question: What role does the alcohol play, both in this as in the preceding preparation, as also in various other spirituous vulneraries?

ANTITOXIN DOSAGE IN LARYNGEAL DIPHTHERIA

There is no place for conservatism in dosage when treating a well-marked case of laryngeal diphtheria, Albert J. Bell writes in *The Lancet-Clinic* for July 31, 1915 (p. 104). As a text for his remarks, he reports the case of a child suffering from this disease, and to whom he gave 21,000 units at a dose. This child already had received 5000 units previously, given by the attending physician. In spite of this large dosage, no marked improvement occurred for about eighteen hours.

As Doctor Bell shows, there always is the liability of mistaking laryngeal diphtheria for laryngeal croup, and, as we all know, this form of diphtheria is peculiarly prone to prove fatal. Under such circumstances, physicians should never be sparing in the dosage of antitoxin. Also, in order to insure immediate action, it is advisable to make the first injection—of 15,000 or 20,000 units—intravenously, introducing an additional dose of 15,000 under the skin or intramuscularly. Only when the antitoxin is introduced directly into the vein can we be sure of securing the maximum effect in the minimum time.

THE DOSAGE OF DIPHTHERIA-ANTITOXIN

We advise every reader of CLINICAL MEDICINE to make a mental note of the table below, which gives the dosage of diphtheria-antitoxin for different ages and varying degrees of severity. This table was prepared by Dr. William H. Park, director of the Bureau of Laboratories, of the New York

health department, and it is reprinted from *The Weekly Bulletin* of the department. It has been endorsed by the medical board of the Willard Parker Hospital and by the diagnosticians of the Bureau of Preventable Diseases:

| | Mild Cases Units | Moderate Units | Severe Units | Malignant Units |
|--|----------------------|----------------------|------------------------|------------------------|
| Infants, 10 to 30 pounds in weight, (under 2 years of age) | 3000 1 3000 | 5000 5000 | 10,000 10,000 | 10,000 |
| Children, 30 to 90 pounds in weight, (under 15 years of age) | 3000 4000 4000 | 4000 to 10,000 | 10,000 to 15,000 | 15,000 to 20,000 |
| Adults 90 pounds and over in weight | 3000 1 5000 | 5000 10,000 | 10,000 20,000 | 20,000 40,000 |

Cases of laryngeal diphtheria, moderate cases seen late at the time of the first injection, and cases of diphtheria occurring as a complication of the exanthemata should be classified and treated as "severe" cases.

In all cases a single dose of the proper amount, as indicated in the schedule, is recommended. For immunizing purposes a dose of 1000 units should be used.

It is recommended that the methods of administration be as follows:

- Mild cases—subcutaneous or intramuscular.
- Moderate cases—intramuscular or subcutaneous.
- Severe cases—intramuscular, subcutaneous or intravenous.
- Malignant cases—intravenous.

EMETINE IN THE CONGO. HEMORRHOIDS

According to a report made by Van Branden and Dubois, and published in the *Presse Medicale* (July 22, 1915), the introduction of the emetine treatment of amebic dysentery in the Congo has caused a decided reduction of its mortality. The authors prefer to administer the drug intravenously.

An interesting report is also given of a case of hemorrhoids in which the administration of 1 1-2 grains of emetine hydrochloride relieved the pain and caused shrinking of the tumor so that it was readily returned into the rectum.

NARCOTIC ANESTHESIA

An interesting paper upon narcotic anesthesia is contributed by G. Mason Astley to the March number of *The Pennsylvania Medical Journal* (p. 441). Doctor Astley has had considerable experience with hyoscine-and-morphine anesthesia and has come to the conclusion that this method of securing surgical analgesia is of special advantage in cases in which inhalation-anesthesia is contraindicated because of fear or nervous excitement; also, in operations about the upper air-passages, and in cases of lesions above the diaphragm, such as cancer of the breast or neck or of cranial or facial lesions where there

are no contraindications to the use of narcotic drugs.

The author does not believe that the hyoscine-morphine method of producing anesthesia is an ideal one to choose for young patients, the deliriant action of the hyoscine being much more marked in these than it is in the individual of more mature years, and (we may add) morphine being peculiarly toxic in children.

Narcotic anesthesia always is contraindicated when pathological conditions are marked in the lung, with consequent limitation of the respiratory area. Astley also hesitates to employ it when there are renal complications, because of the well-known deleterious effect of large doses of opium or its alkaloids in chronic interstitial nephritis.

The chief advantages of hyoscine-morphine anesthesia, as enumerated, are: the ability to maintain a smooth, continued anesthesia, in counterdistinction to the intermittent anesthesia obtained when intratracheal insufflation cannot be availed of; the anesthesia is secured in a pleasant manner, without the depressing influence of fear; and it is followed by postoperative sleep of three to six hours' duration, from which the patient awakes without knowledge of anything having occurred.

Doctor Astley affirms that by complete cooperation of the patient with the attendants it is possible to anesthetize and operate upon an individual without leaving in his mind any recollection whatever of the procedure. Combined with local anesthesia, the narcotic method fills admirably the design of the anociassociation-technic of Crile.

An hour and a half before the time for the operation, 1-6 grain of morphine and 1-100 grain of hyoscine are injected subcutaneously; this dose being varied, however, according to the age and physical or other condition of the patient. No more than 1-4 grain of morphine should be given at this time, and it seldom is necessary to go as low as 1-8 grain. A second dose may be given at the end of twenty minutes, while sometimes a third dose is employed, provided the condition of the patient warrants. The third dose may consist either of morphine or hyoscine alone, according to the reaction of the patient to the one or the other drug, and the addition of apomorphine to the third dose frequently is of great value, in Doctor Astley's opinion.

Our own suggestion is, that the physician should err always on the side of safety. Rarely, if ever, is the third dose required, and usually two doses, consisting of 1-4 grain

of morphine and 1-100 grain of hyoscine each, are ample under any circumstance. The latter may be replaced by a few whiffs of chloroform or ether, and this usually is desirable whenever any serious operation is contemplated. By combining the hypodermic with the local anesthesia, after the method of Crile, the quantity of the narcotic required is reduced to even less than that indicated above.

EXOPHTHALMIC GOITER

The symptoms of Graves's disease, according to Israel Bram. (*N. Y. Med. Jour.*, Nov. 27, 1915, p. 1095), are the result of an excessive amount of thyroid secretion in the blood. The diagnosis is not always easy, especially in the early stages of the disease. For instance, it may be mistaken for pulmonary tuberculosis, hysteria, neurasthenia or diabetes.

In the majority of cases, according to Bram, it is unnecessary to resort to surgery. From his experience with 24 cases, he is convinced that almost every case of this disease, if diagnosed early, can be cured by nonsurgical treatment. Also, he feels sure that at least 75 per cent of all cases may be relieved without operation.

The remedy which he finds of greatest benefit in these cases of goiter is quinine hydrobromide, as advised by Forchheimer. It probably yields better results than does any other drug in the *materia medica*. These patients have an unusual tolerance for quinine, and the hydrobromide may be given in 10-grain doses three or four times daily, without producing any symptoms more serious than slight buzzing in the ears. The usual dose, however, is 5 grains three or four times a day. Under this dosage, quoting Forchheimer, "the tachycardia improves, the pulse frequently coming down, from 130 to 140, to 80 or 90 in forty-eight hours; secondly, the thyroid gland diminishes in size, by measurement; thirdly, the tremor and exophthalmos are the last symptoms to leave."

Given in connection with the quinine hydrobromide, Doctor Bram finds some other remedies of value; for instance, suprarenal gland or pituitary extract will be found helpful when there is low blood pressure; also ichthyl seems to have a very favorable effect upon the appetite and nutrition, while lecithin, which stimulates the resisting-power of the tissues, is especially indicated where the nervous symptoms are prominent. This latter remedy is said to control the tremor

and excitability even more effectually than will the bromides. In order to secure prompt results, the lecithin must be supplemented by a liberal diet; it is, contraindicated, however, when the digestive functions are disturbed.

Several other remedies are mentioned that prove of value in some cases; for instance, sodium phosphate, sodium salicylate, the calcium salts, iodine (especially in goiters of syphilitic origin or those undergoing degenerative changes), and ergot and digitalin, the two latter being useful because they overcome the relaxed condition of the heart and vessels.

Doctor Bram also affirms that physostigmine (eserine) often controls the tachycardia when other measures fail, appearing to be of benefit to some patients. Thyroid preparations he does not consider generally useful, indeed, they often aggravate the symptoms. Such sedatives as veronal, sodium bromide, and hyoscine hydrobromide (the latter used in 1-250-grain doses twice daily) may be prescribed to control the nervous symptoms.

Associated treatment includes rest in bed, suitable diet, hydrotherapy, pressure applied to the neck with a plaster bandage, and electrotherapy.

COPPER SALTS IN TUBERCULOSIS

Basing upon his experience with 5 cases of external and 15 or internal tuberculosis, H. Eggers (*Beitr. z. Klin. d. Tub.*; cf. *Muench. Med. Woch.*, Jan. 5) arrives at these conclusions concerning the action of copper salts in these conditions:

As has been demonstrated in animal experiments and thereafter shown also by 5 cases reported by Strauss, copper possesses a definite affinity for tuberculously diseased animal-tissue; and this fact again was demonstrated clinically in the 5 cases of external tuberculosis observed by the author.

The statement is to the effect that the therapeutic action of solutions of copper salts, when locally applied to lupous and verrucous ulcerations, was surprisingly favorable; so, also, inunctions and the internal administration of the remedy seemingly benefited dermatic and surgical tuberculosis. In the cases of internal tuberculosis, the results obtained from the ingestion and inunctions of the remedy were not absolutely convincing. A trial of copper arsenite might be worth while.

Miscellaneous Articles

Eighty-six Years Tonight

SOMETHING lugubriously startling bodies forth as the blurred etching traced on Memory's accusing tablet softly revives.

The recurrence of this fateful anniversary of the stormy midnight just eighty-six years ago reflects that scene, with my fair young mother the central figure of teeming specters clasping her babe of sable destiny. And tonight a mimic tempest rages and a young deluge pours an infant flood without, as if wounded nature mourned and wept over the perversity of a suffering world.

A year ago tonight, I bent over the story of my past. I was telling you all, anticipating the tranquility of dreamless sleep ere this watchnight might fling sombre shadows in my weird sanctum. Yet, here I am, my mind fresh and crisp, reflecting the scintillation of the most noble and ennobling fraternity that adorns the human race. How fortunate to have lived in the clare-obscure shadows the resplendent brilliancy of this enlightened age vouchsafed me amid my remote seclusion; and to be here, one of you, in robust health and vigorous activity of practical usefulness, seems too incredible to believe.

I have passed through a terrible year of famine, revolution, and smallpox, with unprecedented scourges of other diseases. Smallpox has been of the most virulent, deadly type, often fatal in the early fever-stage, ere utulation developed—a fact attributed to vitiated vitality from want of food; delirium entering with an initial chill in many cases. And in this fearful ordeal not one successful vaccination was made, all vaccine, even that from the more accredited manufacturers, arriving inert, due to the intense heat prevailing between here and the coast.

My post has been in the center of the pestilence, professionally alone. I have been obliged to combat the stupid ignorance of authority and the filthy carelessness of the people, both, at the inception, asserting the disease to be measles or chicken-pox or scarlatina, in each invasion, because of death occurring without pustules showing, until unprecedented mortality and some pustules elicited

sane reason. One plantation, a league from my office, had seventeen deaths in a week ere smallpox was admitted to be ravaging there; the owner having had the disease at some former time and claiming to know it as well as I and being capable of diagnosing it. There had not been one recovery on the place. Several other plantations were infected, with a 100-percent mortality of earlier cases, most of them dying within three days of the initial chill. Those who survived to the stage of pustulation were nearly completely flayed, the thickly set pustules joining to the semblance of huge blisters, the nose, mouth, and throat being involved in a distressing manner. Up to the seventeenth death on the nearer plantation, I had neither been called nor consulted, my original smallpox pronouncement having antagonized the populace and the authority, because all the earlier cases died without pustulating.

The ghastly crisis called forth the masterful achievement of my career. The seventeenth death—the victim dying the day after the chill—prompted me to constitute myself an executive committee of one and to assume a dictatorship of the situation. The poor people had bought all the disinfectants in the zone and burned all the horns they could turn up, but despite which the scourge spread as only smallpox spreads. I collected a large number of kerosene cans and had them transformed into the shape of camp-kettles.* Early the next morning, I was on the nearest infected place, and caused all the clothing and bedding of the inhabitants to be boiled (I did not burn them, because they could not be replaced), and had boiling water thrown copiously on the dirt floors of the infected house, and then persuaded all the people to bathe with water as hot as could be borne without blistering.

*In Spanish America—as in other half-civilized countries—kerosene is imported solely in stout 5-gallon cubical tin cans. These are avidly bought up by the natives, who cut out the top and provide a bail by nailing a smooth piece of a branch across the middle. These buckets find manifold uses. Thus, all their hot water for laundry purposes is provided by setting these cans directly upon burning logs in the open.—ED.

Three new cases developed during the night, and to these patients a 1-grain dose of calcium sulphide was given every hour, ten times, the fever and delirium disappearing entirely before the hour for the eleventh dose; but the fact is, I do not really know how much earlier the fever had abated, as I was actively superintending other features, having certainty that the doses would be given on time. I then extended the intervals to every two hours.

I also gave a heroic compound podophyllin purge, in the early part of the same night, to every one on the place, there being twenty-seven not yet stricken, but ten of whom had been directly exposed. To those ten I gave, each, ten 1-grain doses of calcium sulphide the next day, and one dose three times daily for the three following days. The three infected patients later received one granule every three hours. The other persons on the plantation who were said not to have been exposed were given full dosage of flowers of sulphur every morning and night for a week, with instructions to take a saline purge early in the morning, if the sulphur laxative did not prove sufficient. The three stricken patients were perfectly well in four days. No other smallpox cases occurred on that plantation.

The same process was repeated on other infected places, some half-dozen badly pustulated victims being treated. Calcium sulphide and echinacoid were alternated every hour. Also 10-percent phenol oil was applied to the nostrils, mouth, and throat, apparently with propitious effect. But this was not positively ascertainable with the influence of the calcium sulphide and echinacoid acting in the system, which helped to dry up the pustules quickly. The patients otherwise had uneventful recoveries, not one dying. New cases yielded as readily as those on the first plantation, the infection being arrested with them; and, where first new cases appeared on other places, the fever was broken with calcium sulphide; and no other cases developed under my prophylactic treatment.

Here we have a demonstrated certainty of almost immediate death to the smallpox-germ, incubated and actively established in human victims up to the highest infectious development; for, my observation, during fifty years, in the experience of combating Mexican smallpox, teaches me that the high fever, before pustulation supervenes, is almost equivalent to inoculation—the moribund and recently dead states being less perilous, while of potent infectious virulence.

I believe that infection is never conveyed by any person, however exposed, before incubation is complete and the fever-stage developed; not even in clothing not in actual contact, such as that being worn, or the bed of a smallpox patient. I can neither confirm nor deny the possibility of woolen clothing becoming infected in a degree to convey the disease by mere casual contact in a room with a patient, as a doctor or visitor, but am certain that cotton clothing is never such carrier—which are the goods used here. There have been numerous such instances in the recent epidemic, and not one infection that was not traceable to positive contact with the diseased person.

In my conception, the infective medium is so completely destroyed by the saturation of a person with calcium sulphide, especially when the dosage begins within a few hours after the inception of fever, that transmission of the disease is not possible to endanger exposed persons; yet, I deem it safer to insist on prophylactic treatment of such persons.

I believe, however, that flowers of sulphur given to full saturation would immunize persons in actual process of incubation ere the fever-stage is reached; for, among seventeen persons said never to have been exposed on the first plantation, it is a dubious presumption that some of them did not have germs in their system, amid such terrible infection in closely huddled houses of such careless, filthy people; and those seventeen merely had the sulphur protection.

But calcium sulphide is indubitably a magical remedy, developing in the system some undefinable sulphurous compound, which is eliminated through the pores of the cutis, in strength sufficiently potent to prove germicidal in almost, if not all, cutaneous disease, smallpox the most formidably virulent among them. And I have established the fact beyond the latitude of peradventure that smallpox has been vanquished, in its various stages, by that subtle substance.

But, the 60-percent pharmacopeial calcium sulphide of commerce will not do—the 100-percent article of Burroughs, Wellcome & Co. of London, or of The Abbott Laboratories, of Chicago, is what is needed. There may be other makes as good, but I have not come across any, either among French or American products.

With an abundance of good live vaccine, I might have made a very different fight, but, perhaps with a higher mortality. I obeyed the spur of necessity, employing available makeshifts as weapons; and I regret to know

that the prophylaxis is not a permanent protection to persons who have not had the infection. It also remains to be verified whether the aborted cases will prove equally protective as if the disease had run out its course. Still, the fact of infection must insure higher-grade security than any cowpox vaccination can afford, notwithstanding that the disease was killed in the system.

For all that, calcium sulphide will ever be the grand emergency auxiliary in combating smallpox where vaccination lends no protection.

My uninvited battle with this frightful pest won me envy, but also great gratitude—gratitude in preponderating measure among the masses, the people whom I saved and those whom I protected. To the chagrined authorities, who nearly bankrupted the people in buying worthless disinfectants and employing quarantine-guards that did not quarantine, and also the quack fraternity, who assured the public that there was no smallpox, the lines of the immortal poet aptly and pertinently may be applied:

He who ascends the mountain-top will find
The loftiest peaks most wrapt in clouds and snow;
He who surpasses or subdues mankind
Must look down on the hate of those below;
Though high above the sun of glory glow
And far beneath the earth and ocean spread,
'Round him are icy rocks and loudly blow
Contending tempests on his naked head—
Such reward the toil that to those summits led.

Mexican hamlet authority exacts obsequious humility, a tribute I never pay, though friction rarely occurs; and never save in issues of public health.

But my humble, commonplace triumph over a mortal foe will provoke no envy or jealousy among the generous fraternity for whose pensive eye this greeting is written.

The life I live is so unlike that of any of you that the spice of your sauce would be gall and wormwood to me; and that is why my final days will pass in this wild refuge rather than where civilized companionship might fail to soothe. Once I was more absorbed; but now my leisure moments are not devoted to medical or to fictitious scribbling; and there is nothing new to read, as newspapers do not reach us now.

The practice of medicine has dwindled to only the better classes, the emancipated poor element being out of the province of medication, since the plantation owners no longer assume the responsibility; and the poor wretches are not able to buy corn, they have

free food no longer, much less free medicines. The famine has emaciated the race, many dying of sheer hunger, while anemia, that becomes dropsical, is rapidly doing the work of extermination.

The people are dying as of the plague, even the prevalent fevers being fatal. The low ebb of the blood stream responds to no treatment in the more desperate cases, while it surely, if slowly, declines. Such children are immedicable, mostly due to the vice of eating dirt; and I have tried to save some men and women among the more hopeless victims, some of whom crept into the convalescent state, but died of relapse, due to overeating improper food, there being no other. Even the middle ranch-class has neither meat, fowl, eggs, milk nor beans. Nor are fair corn and rice crops in process of harvesting, because of the scarcity of workers, the men all being in military service. Inundation has destroyed all crops, from near here below to the coast, and drowned the live stock, as well as many of the people. The concussions of European millions in war are creating a second deluge on earth. Such disastrous floods of high water have never been known here before, nor such torrid temperature, when the sun comes out on high.

The solitude of this big house in which I live and write, whose loneliness is unbroken by the chirrup of a cricket or the nibble of a mouse, is sometimes monotonous in the silent night—wakeful nights haunted by hidden memories of the loved and the lost. It may be that this is a cherished weakness, yet, it is intensely human. Do none of you, bachelor, widowed or divorced brothers, however the estrangement, ever feel like moaning in your stifled sorrow?

Deep in my soul that tender secret dwells,
Lonely and lost to light forevermore,
Save when to thine my heart responsive swells,
Then trembles into silence as before.

There, in its center, a sepulchral lamp
Burns the slow flame, eternal—but unseen;
Which not the darkness of Despair can damp,
Though vain its ray as it had never been.

Such are little grains in the sands of life; and fortunate are those able to guard them at the bottom of sediments; yet, despite all effort, they persistently bob up in memory ever and anon; as, undoubtedly, they softly rise to all of you, even though some may be too proud to confess the inward weakness.

In the pursuit of fortune and some modicum of evanescent happiness, deemed to be of

mortal lot, the best of you fail to attain the coveted goal. The intervention is met of

Circumstance, that impersonal God
And Miscreator, who makes and helps along
Our coming ills with a crutchlike rod,
Whose touch turns Hope to dust—the dust we all
have trod.

ROBERT GRAY.

Pichucalco, Chiapas, Mexico.

[Doctor Gray wrote this letter upon October 31, his birthday. I give this fact, because so many readers of CLINICAL MEDICINE are interested in the work of this wonderful man. I hope all of you are following his remarkable autobiography, an instalment of which will be found on page 52, this issue.—ED.]

SOME EXPERIENCES WITH ANTITOXIN IN DIPHTHERIA

My first experience with antitoxin was on Thanksgiving Day, 1895. The patient was an Italian girl of seven years, whose throat was literally crowded with diphtheritic membrane. I saw her first in the morning, and in the evening I injected 15 Cc. of the serum—which, if I remember rightly, was one of 1000 units. This was on a Thursday. On Sunday morning, the child's throat was free from membrane and she was sitting up in bed and writing on her slate. By Tuesday, recovery was so far advanced that I paid my last visit. Of course, it really was too soon to leave her to herself; still, the outcome justified my action.

Since then I think I have never failed to administer antitoxin in every case of this dread disease. That is to say, diphtheria was a dread disease before the advent of antitoxin, as every physician who practiced in preantitoxin days will testify; for, since then its treatment has become a comparatively simple matter and the disease little to be dreaded. In the twenty years since this first case, I have lost but one diphtheriac patient, and that was diphtheritic croup. And I ought not to have lost even that one.

The most important lesson I have learned in regard to antitoxin is, that one *must use it early*. In all ordinary attacks, when this is done, neither large nor repeated doses are needed.

When antitoxin is administered on the *first day* of the disease, the mortality is practically *nil*. But, every day of delay increases the danger manifold, in growing ratio. Antitoxin stops the progress of the disease, but it can not undo the damage already done.

The further it has progressed, the greater the danger, and the larger the dose required.

When the patient is not seen or the disease is not recognized, or for any other reason the remedy is not administered until the disease has progressed for a number of days, large and repeated doses are called for. The same is true of those cases which are properly called malignant, even when seen early. Only few of my cases have been of this latter character, and I think I am safe in saying that in nine cases out of ten one early injection of 1500 units has proven sufficient, without repeating the dose.

As might have been anticipated, some mistakes were made in the early days of antitoxin. Our technic was not perfect. We did not understand the need of perfect surgical asepsis as well as we do now. Nor were we able at first to differentiate between the effects of the antitoxin and those of the serum which carried it. Neither was the method of preparation as perfect as now or the product as concentrated. Experience teaches. With strict asepsis, a perfected product, and a proper technic, the danger is so small as scarcely to be considered. Yet, some fatal accidents have occurred, be it from idiosyncrasy, improperly prepared antitoxin or imperfect technic.

An experience which I had about a year ago may be worth repeating. On the last day of November, a case of diphtheria appeared in one of our schools. The school was closed temporarily, and the rooms were fumigated; then the school was reopened and the work went merrily on. About a week after this—on December 6, 1914—I was called, toward night, to see a little girl who, with her two sisters, had been attending this school. I found her suffering from a severe sore throat, but no membrane was visible. Nevertheless, the symptoms, in connection with the known exposure, led me to suspect diphtheria. It would have taken at least twenty-four hours, under favorable circumstances, to have received a report from the State Board of Health, and I did not deem it wise to wait. Some may criticize this stand, but I find it sustained by the following from H. C. Wood: "When any case presents the clinical aspect of diphtheria, the antitoxin should be used at once. For educational purposes and for rendering definite our knowledge, the municipal laboratories are very useful; for purposes of treatment, the less attention paid to them, probably, the better for the patients."

So, the next morning I saw the little girl early and decided that the case was one of

diphtheria, though the membrane was as yet but elementary. I injected 1500 units of the antitoxin provided by our state board. The girl still was 'round about the house; within twenty-four hours she was improving, and she was never confined to her bed. There were no complications, and the attack was an ordinary one. In a few days, the patient was practically well, though no doubt she still carried germs in her throat.

However, on the fourth or fifth day after I injected the first case (I say the fourth or fifth; we country doctors are so busy looking after our patients that we do not always stop to make accurate records of each step of our doings—thereby lessening, I admit, the value of our reports), her younger sister showed signs of sore throat; so, without waiting either for membrane or report of culture, I promptly administered another 1500 units of antitoxin.

Right here, I may as well remark that probably the best thing I could have done at the outset of the first case, after administering the antitoxin to the sick girl, would have been to give an immunizing dose to every member of the family. You may criticize me for not doing so, and I will not complain. Suffice to say that I did not. And, now, as I think of it, it occurs to me that, had I done so, I should have lost the lessons I learned from an interesting subsequent series of cases, and, moreover, should have labored under a lurking fear that my first (and only) case was not diphtheria.

The second case went on like the first one, and in a week's time the patient was practically recovered. But, before this time came, the third, and last, child in the family was taken with the same symptoms. She, too, received 1500 units of antitoxin, and then went through the same brief course as did the other two. But, no sooner was she well on the way toward recovery, than the mother, who had been taking care of all the three children, was attacked in the same way; whereupon she received the same treatment. She was, perhaps, a little sicker than the girls had been, but was never continuously confined to bed and recovered rapidly.

Meantime the father, who, living on a country farm and away from any near neighbors, had been out of doors much of the time and thought, surely, he would escape, began to suffer from a severe sore throat. Owing to causes which I need not stop to state, I was not able to give him the usual dose of antitoxin until a somewhat longer time had elapsed than in any of the other victims.

The result was, that he was much sicker than any of the others, and was rapidly growing worse when eventually the remedy was administered—1500 units of antitoxin, no more, no less. Had I had another dose, I should have given it, but I did not. Again within a few hours improvement set in, and continued without interruption. He kept in bed more or less, but was never actually confined to it.

This ended the course of diphtheria in this family, the whole course taking less than a month. There were no near neighbors, and no other cases appeared.

The treatment, summed up so far as medical measures were concerned, consisted of antitoxin (1500 units only, in each case), antiseptic gargles, and saturation with calcium sulphide.

J. M. FRENCH.

Milford, Miss.

DIPHTHERIA ANTITOXIN

It is quite general to speak of the action of diphtheria-antitoxin as being both prophylactic and curative. While the practitioner understands the meanings of these two terms, we are not strictly correct in the use of the word curative. In fact, diphtheria-antitoxin has no curative action whatever. In other words, it does not prevent the development of the diphtheria-organism, nor does it in any way participate in the repair of the poisoned body-cells. Its action, therefore, after the disease is established, is a neutralizing one, and not curative.

The development of the organism of diphtheria in or about the air passages produces violent toxins or poisons and, owing to the generous blood supply of these parts and the very superficial character of this vast capillary network, these poisons are absorbed by the general circulation as they are being formed. This accounts for the rapidity with which the disease manifests itself in many cases.

The clinical picture, so characteristic of this dread disease, is caused by the absorption of these toxins. Except in those cases where mechanical obstruction by the membrane causes death by suffocation, our fatalities are due to the destructive action of the toxin on the various cells of the body, notably the heart and liver. Fortunately in diphtheria, these toxins are absorbed by the blood and are found floating freely therein. It, therefore, resolves itself into what might be called a mechanical or a chemical process

of flooding the circulation with a sufficient number of antitoxic units to combine with and neutralize the toxin.

Many people possess a natural immunity, partial or complete, depending upon the presence of diphtheritic-antitoxic units in their blood; but in those persons who develop the disease, and who, consequently, do not possess any antitoxic units or only an insufficient number of them, it will be readily seen that the administration of a relatively small amount of antitoxin, previous to the onset of the disease, will fortify their blood stream, and this will be ready and available for neutralizing any toxin that may be formed later.

Thus, briefly and without attempt to enter into the minute details of the process of infection, it will be seen that the use of diphtheria-antitoxin may be grouped under two headings—that of immunization and that of neutralization, or, the socalled curative use.

Immunization is a simple process. It has been found by many years of clinical observation that one or two thousand units of diphtheria-antitoxin, administered upon exposure but previous to the development of the disease, will produce a passive immunity in the individual and protect him for several weeks. If the exposure is continued, especially in children, the immunization should be repeated after an interval of two or three weeks. In the treatment of the disease, however, each hour or day brings added danger and makes it much more difficult to combat.

We have taken the liberty of quoting rather fully from an article by Dr. Wm. H. Park and Dr. George P. Biggs, as published by them in the collected studies from the Bureau of Laboratories, Department of Health, City of New York, 1913. We feel sure that the perusal of this quoted portion will convey the necessity for the giving of large initial doses of antitoxin very much better than is within our power to do. We quote:

"Numerous experimental studies have demonstrated that a small amount of antitoxin will save when given before or shortly after the injection of toxin and that for each minute that elapses larger and larger amounts are required, until finally no amount will save. The following experiments, in which intravenous injections of toxin were followed by intravenous injections of antitoxin, are so striking that they are given, even though they are similar in some respects to the published results of others. The experiment already recorded indicates that a dose sufficient when given as a single dose is insufficient when

divided into several doses, even though the total amount is increased.

"A number of rabbits were given intravenously ten fatal doses of diphtheria-toxin. At different intervals of time, antitoxin was given; the following amounts were required to save at the different intervals:

"Amount sufficient to save life:

| | | |
|------------------------------|-------|------------|
| Given after 10 minutes..... | ..... | 5 units |
| Given after 20 minutes ..... | ..... | 200 units |
| Given after 30 minutes ..... | ..... | 2000 units |
| Given after 45 minutes ..... | ..... | 4000 units |
| Given after 60 minutes ..... | ..... | 5000 units |
| Given after 90 minutes..... | ..... | No amount |

"These results emphasize the need of haste in giving antitoxin in serious cases. Fortunately, in the ordinary case the diphtheria-poison has not reached the blood current in any large amount at the time the patient is seen. The severe septic cases have, on the other hand, absorbed a great deal of toxin when we reach them. Here, every minute's delay is of importance. In the moderate cases, delay in giving antitoxin allows the local lesion to advance, but, unless this becomes very extensive, the only harm caused is, delay in recovery. In the severe cases, the intravenous injection of antitoxin is always indicated, as no time is lost due to slow absorption from the subcutaneous tissues. In the mild and moderate cases, the intramuscular or subcutaneous methods suffice. The rapidity of absorption from the intramuscular tissues has been demonstrated, in animal-experiments, to be about twice that from the subcutaneous tissues. Its administration in actual cases of diphtheria, in our investigation, did not usually show such an increased rapidity of absorption. This is probably because the serum did not remain within the muscle-sheath. The following dosage of antitoxin is now used by us:

| | Units in Cases | | | |
|-----------------------------|----------------|----------|--------|-------------|
| | Mild | Moderate | Severe | Very Severe |
| Infants under 1 year | 2000 | 3000 | 10,000 | 10,000 |
| Children 1-5 years | 3000 | 5000 | 10,000 | 10,000 |
| Children 5-9 years | 4000 | 5000 | 10,000 | 15,000 |
| Persons over 10 years | 5000 | 10,000 | 10,000 | 20,000 |

"These doses are selected after considering both the relative degree of danger at the different ages and the importance of size upon the dilution of the antitoxin. The antitoxin should be given intravenously in the very severe cases. In all others, the subcutaneous or intramuscular methods suffice to save life, but do not give as quick results.

"Much smaller injections will suffice to save life in the majority of cases, but the larger doses advised will produce quicker local and constitutional effects and will in the more severe cases undoubtedly save some lives which would otherwise be lost.

"It is conceivable that even larger doses might save an occasional life, but such a result is certainly rarely to be hoped for.

"The giving of antitoxin intravenously adds many times to its unit-effectiveness. Every 1000 units given into the circulation is worth at least 4000 given subcutaneously. When only small amounts are available, the antitoxin should be given intravenously."

RICHARD SLEE.

Swiftwater, Pa.

ANAPHYLAXIS AND "SERUM-SICKNESS" CAUSED BY ANTITOXIN INJECTIONS

The criteria governing the functional and other disturbances in anaphylaxis are more or less peculiar to each species.

Generally speaking, the symptoms produced by different proteins are quite uniform and characteristic in the same species, while in different species the symptoms may vary, because the same organs are not involved to the same degree; and then, again, the methods and degrees of sensitization vary with each species. The guinea-pig requires only a single minute dose of a given protein, then, after an incubation-period of ten days, the animal will be acutely sensitized to the same protein, and will remain so the rest of its life.

If the guinea-pig receives injections, say, every three days, of the same protein, it will show no symptoms. In other words, it will not become sensitized as long as these spaced injections are continued. If, though, the injections are discontinued for ten days, the animal will become sensitized. With the rabbit, spaced injections daily or weekly, will sensitize, and after about the sixth to eighth injection the animal will die of acute anaphylaxis. A single injection will not acutely sensitize a rabbit.

In human beings, the ordinary symptoms of "serum-sickness" are so familiar that it is hardly necessary to mention them: urticarial and erythematous eruptions, local and general edema, swelling of the lymph-nodes, pains in the joints, headache, weakness, fever, and leukopenia.

Any or all these symptoms may follow the first injection of therapeutic antisera. The symptoms usually appear after about eight to twelve days, and in these cases it is not clear how sensitization has been produced. It has been assumed that some of the serum remains unchanged, possibly in the skin at the point of injection, until enough of the substance required to cause a reaction with

the unchanged serum has been produced by the body. If serum is reinjected a week or more after the first injection, there may develop an immediate reaction, with marked local changes, even from a small dose of serum, and sometimes, though rarely, followed by severe symptoms and collapse. In these cases, the conditions and general picture of anaphylactic phenomenon are reproduced classically.

"Serum-sickness" and the conditions described were more common some eight years ago, when native sera were used, from horses immunized against diphtheria, and in a similar manner against tetanus, than we now experience from the partially purified antisera.

The first successful research on purifying these antisera for therapeutic use was carried out in the Research Laboratories of the New York City Health Department, eleven years ago, by Doctor Gibson. Although this first purification was a disappointment, so far as materially lessening the constitutional disturbances were concerned, it did stimulate further research, which the writer completed. Every year since then, the purification has been made more and more successful, and now constitutional disturbances are a rarity. We always shall have certain individuals hypersensitive to foreign proteins, just as certain individuals are hypersensitive to strawberries, chocolate, certain sea foods, and the like.

E. J. BANZHAF.

New York City.

[Doctor Banzhaf, as some of the readers of CLINICAL MEDICINE may know, is an authority on the making of antitoxin. In his work in the Research Laboratories of the New York City Department of Health, he has developed the method of concentrating and purifying the diphtheria antitoxin, as begun by Gibson. The method now generally employed by advanced manufacturers of this remedy is known as "the Gibson-Banzhaf method."—Ed.]

COLDS, AND THEIR TREATMENT

In your comment on Doctor French's thought-producing article, in the October number, on colds, you ask your readers for suggestions.

I have found, by long experience, that there are two kinds of "colds." One is simply a congestion of the mucous membranes of the respiratory tract, caused by the

cold driving the blood from the surface of the body and congesting the nose, throat, bronchi or stomach. The latter is not generally recognized by even the doctor. But I have seen many cases of "colds" of the stomach as positive as any of the respiratory organs.

The second kind of colds is germ-produced, and these belong to the influenza-type of disease. Treatment of the "cold"-colds is simple, if taken in time. First flush the skin—gelseminine, aconitine, atropine, quinine or pilocarpine will do this satisfactorily, if the temperament of the patient is understood, and then the remedies are adapted to each patient's requirements. The one who is troubled most with head- and nose-symptoms will be relieved quickly by gelsemine hydrobromide and keeping in bed. In those whose bronchi are most congested, aconitine and atropine are beneficial, or quinine for persons who are not susceptible to the effects, produced by this alkaloid, on the hearing.

The germ-produced colds require anti-septic sprays, calcium sulphide, and gel-selenium. A spray of Lugol's solution often will work wonders in influenza. As soon as the acute symptoms subside, give the compound hypophosphites and nuclein. [Triple arsenates with nuclein is hard to beat for this stage.—Ed.]

For the cold in the stomach, prescribe mild cathartics and atropine, followed by hydрастис in some form.

Seen early, all these colds can be aborted, except in persons who have chronic catarrh of the respiratory tract or stomach. I have seldom seen a person who had a cold in the air-passages and stomach at the same time.

THOS. W. MUSGROVE.

Sultan, Wash.

[Doctor Musgrave's classification is interesting, and his method of treatment excellent. I am sure it will "work." However, I have my doubts about there being any purely "congestive" and non-infectious type of a cold. When the secretions of a patient suffering from such an ailment are examined they tell strange stories. For instance, Doctor Biehn has just been telling me about an unusual type of "cold in the head." A bacteriological examination of the nasal mucus revealed the presence of a strange-looking organism which "looked" like a Friedlander bacillus, but was non-capsulated. Further investigation showed it to be colon bacillus—in the nose, of all places!]

As to the stomach "cold," I am reminded of an article which appeared in *The Illinois Medical Journal* recently, in which Hinkelmann showed that cases of the so-called "intestinal influenza" were really presenting enormous numbers of the bacillus of winter cholera. We live and learn!

Whatever the bacteriology of the "cold," Doctor Musgrave's method of treatment should commend itself to discriminating physicians. It can be built on to or modified to suit individual needs.

There is a type of colds tending to chronicity or recurrence. In my opinion, these should be treated with autogenous bacterins. Doctor Biehn is greatly interested in these cases and will advise you in any that are proving troublesome. Write him—and send him cultures from the secretions.—Ed.]

FOLLICULAR TONSILLITIS

Follicular tonsillitis, frequently associated with rheumatic complications, is the most common kind in our country practice. Its sudden onset with chills and fever, with temperature often high—up to 102° to 105° F.—swelling and pain, pain usually severe, with excessive secretion of mucus, and great difficulty in swallowing, are all characteristic and will usually serve to distinguish this from the more severe forms, such as diphtheria, croup, and streptococcic sore throat.

Treatment can be made curative, provided it is instituted early and is vigorous and thorough. A hot mustard foot-bath should be given, then the patient put to bed, well covered, in a half-sitting posture; for patients can scarcely ever be made to lie down.

A light ice-bag applied to neck from ear to ear is one of the best remedies to relieve pain and reduce engorgement; and best results are obtained if one can have a trained nurse to apply it, as I find so many people are afraid of it and will not use it as directed.

For an adult, I give calomel, 1-10 grain, calcium sulphide, 1-8 grain, the defervescent compound, and hyoscyamine granules, one of each once an hour (in severe cases every half hour) till ten doses have been taken. Then a teaspoonful of saline laxative once an hour, till three or four doses are taken; after which a dose two or three times a day, as needed. Also a teaspoonful ferro-salicylate (Wm. S. Merrell's) every two hours, till better; then every three to six hours.

In rheumatic cases, this gives most excellent results. If fever persists, the defervescent

compound is continued; and, if there is much depression, cactoid, strychnine, and nuclein are added—hypodermically, if much difficulty in swallowing exists.

If the patient can use a gargle, a solution of equal parts of listerine and peroxide of hydrogen is very good to clear the throat of mucus. For the pain and distress, a tablet of phenacetin and salol on the tongue makes one of the most effective remedies, and is especially good in streptococcic sore throat. The ordinary tablets do not taste bad, but would probably be better made up into regular throat-lozenges.

Neglected cases, and even some under the best of treatment, will end in suppuration, and, if spontaneous rupture does not occur in a reasonable length of time, I put a good-sized cork between the patient's teeth and, with the forefinger force an opening. I have discarded opening a tonsil with the knife.

W. A. MARNER.

Miles, Ia.

STREPTOCOCCIC SORE THROAT

The public in general consider sore throat (that is, not diphtheria) a simple matter and not infectious. People do not take any precautions with regard to the spread of the disease, and it is not an uncommon occurrence to see an entire family sick with tonsillitis, all having been originally infected from one member. The smear from the throat of such case sent to the health-office or bacteriological laboratory invariably comes back negative as to diphtheria.

The mode of onset is, as a rule, sudden. There is a chill, followed by a fever and the complaint of a feeling of sore throat. The throat at first is red and in a few hours a thin patch of membrane may be detected upon one tonsil. This membrane may, in some cases, even spread and involve the pillars of the fauces or the uvula. As a rule, it is not as thick as the diphtheria-membrane, but may be quite tenacious, and leave a bleeding spot when removed. The breath may be quite offensive, such as is usually found accompanying cases of diphtheria, and the patient very often complains of a feeling of weakness and prostration when attempting much exertion. Having been given such a clinical picture, I have found it to be almost impossible to make a differential diagnosis between diphtheria and a nondiphtheritic sore throat without the aid of the bacteriological laboratory.

My experience in streptococcic sore throat has taught me to consider this form of sore throat to be as grave a condition as a true diphtheritic sore throat. I believe that most of the cases of rheumatism following tonsillitis are of this type of infection. I know from clinical experience that cases of endocarditis may follow such an infection.

Some time ago, I was called in consultation to see a patient who had been operated upon by one of our throat-specialists here in the city. At the time of the operation, there was a slight inflammation and a small membrane upon one tonsil. The operating surgeon disregarded this inflammatory condition and proceeded to remove the tonsils by enucleation. In a few days, there appeared unmistakable signs of a mastoid abscess, and then the child was operated upon for this complication.

At the time that I saw the child, the temperature was running the typical course found in thrombosis of the lateral sinus, that is, the temperature would shoot from normal up to 105° and 106° Fahrenheit in an hour or two, then in a shorter time drop back to normal. Cultures made at the time gave an almost pure culture of streptococci. An autogenous vaccine was prepared, and this was used for about forty-eight hours; for, the parents seemed very much opposed to further operation. At the end of this time, the conditions being very desperate, another surgeon saw the patient, and he concurred in the opinion that the lateral sinus should be uncovered and possibly ligation of the internal jugular vein made—which finally was done.

The child eventually recovered, but all of this could have been avoided if the primary operation had been deferred until the inflammation then present had disappeared.

Another case which I had under my care was that of a young man who was attending college in one of our eastern universities. He contracted what he thought to be simple tonsillitis. He was under the care of the college-physician for about a month before he came home. I found one tonsil about half gone and a deep craterlike ulceration in the remaining portion. The anterior pillar also was deeply ulcerated. The entire throat was red and inflamed, making swallowing very painful.

I thought at first I had to deal with a syphilitic sore throat, but the young man absolutely denied any infection. A smear from the throat was sent to the laboratory and the report came back, with of the presence

of streptococci and Vincent's spirillum. I tried the usual antiseptics, such as argyrol, 5-percent solution of nitrate of silver, and the like, without getting any impression upon the ulceration. Eventually I used pure carbolic acid, neutralized with alcohol, and this healed up the ulceration.

There was another case of a young lady, a student at our university, who had a sore throat that in all particulars seemed typical of diphtheria; yet, three or four smears sent to the laboratory gave negative results; but, on the last report, the bacteriologist indicated that the infection was one of streptococci.

In about a week after the patient was dismissed, she began to complain of rheumatic pains in various portions of the body. The rheumatism became progressively worse, until at the present time she has become a complete invalid. There is a marked valvular murmur, due to endocarditis, and there is also a stiffening of the joints to such an extent that she can not get out of bed or feed herself. All forms and manner of treatment have been used in her case. Antistreptococcal serums, used in the beginning, had absolutely no effect. Rheumatic phylacogen was given a thorough tryout, through the courtesy of Parke Davis & Co., but with absolutely negative results. The salicylates were absolutely negative. She has tried all schools of practice, and I believe at the present time is under the care of a "magnetic healer." I cite this case, to show how seriously streptococcal infection in the system may affect a patient.

My treatment of streptococcal sore throat is, first to have the throat swabbed every four to six hours with a 10-percent solution of argyrol. As internal treatment, I saturate the patient with calcium sulphide. If there is much aching, I give aspirin or sodium salicylate. For the fever, I rely upon aconitine. In some cases, if the inflammation has subsided but the tonsils remain large and more or less sore, I put the patient upon phytolaccoid. Sometimes the red mercurius, in doses of about 1-1000 of a grain, will give excellent results in this form of sore throat. The combination tablet containing aconitine, bryonin, atropine sulphate, and mercuric iodide is ideal in any case of sore throat. In the beginning of the attack, I always give a course of calomel. I do this first, in order thoroughly to clean out and clean up the general system. I do it, secondly, because of the resolvent action of calomel upon glandular tissues.

There should always be an examination of the urine, as it is not at all uncommon for a

nephritis to develop. As in diphtheria, the diet should be nutritious and easily assimilated. The patients all do better when confined to bed. If possible, the patient should be isolated from other members of the family, and in all cases the parents should be warned that dishes and all else used by the patient should be boiled.

CLIFFORD E. HENRY,
Minneapolis, Minn.

SORE THROATS: HINTS ABOUT TREATMENT

For the sake of brevity and convenience, we will say there are just two classes of sore throats—the acute and the chronic.

The acute ones can all be greatly benefited, and many of them cured, by thorough spraying with a saturated solution of sodium salicylate and fluid hydrastis. Where there is any fever, aconitine, acetanilid, and sodium salicylate in solution should be given in small and frequently repeated doses, until all fever is gone. If the glands are swollen, tincture of poke-root should be added to the fever-solution; and where the patient is seen early and there is profuse secretion, atropine may be added to advantage. Of course, the bowels should be thoroughly cleaned out, and kept clean.

Diphtheria may go into this class and receive the same treatment, the antitoxin also being given when required; but, if the first plan is well carried out antitoxin will seldom be required. I have used it but once in fifteen years, and I have not lost a case of diphtheria in that time.

When there is a tendency to croup, the patient should be saturated with calx iodata, and the iodine preparation will help out in nearly all acute or chronic cases.

No matter what these troubles may be named, success comes in these cases by giving all the remedies to effect; the sodium salicylate should be pushed to saturation, and, where the glands are involved, the tincture of poke-root also.

All chronic cases are greatly benefited and many of them cured by mopping the throat out well with a solution of iodine, two or three times a week, commencing with a weak solution and gradually working up to full strength of the tincture. But, strange as it may seem, I never have had a patient complain of any pain or discomfort when I used the full-strength tincture from the very start. All chronic sufferers require, and should have, a good general alterative, or, what we older

fellows call a "blood-medicine"; and, as in the acute cases, the alimentary canal and all the glands in the abdominal cavity should be stirred up and put to active work. In other words, the whole sewer-system should be flushed and kept flushed. They have all become torpid and lazy and require whipping up.

M. E. JOHNSON,

Pittsburg, Kans.

[In diphtheria, no doctor should take chances or temporize. Give antitoxin in every instance, and give enough. Doctor Johnson has been lucky, but you or I have no assurance that our cases will do as well as his. Having had diphtheria in my own home, I tell you frankly that I fear it.—ED.]

ACUTE SORE THROAT AND HOW I TREAT IT

The acute sore throat may be due to one of many causes, while its treatment rests largely upon the etiologic factor, in many instances; although, in the main, we use practically the same remedies in every case—that is, the agents for overcoming conditions peculiar to all.

A goodly number of us have come in contact with the sore throat due to streptococcic infection—the rheumatic sore throat—and it has given us a considerable amount of worry, as it does not, seemingly, submit to the ordinary remedies.

In this condition, as in rheumatism, I have found the salicylates giving good results in some cases. These should be pushed, as in rheumatism, to the limit, and, if used early, they will, I believe, give good results. It is possible that the strepto-bacterin or the streptococcic serum will give good results. They are, surely, indicated and should be given a trial. In these cases, atropine acts as a synergist to the salicylates, in that it carries the blood to the surfaces and thus relieves the local congestion or inflammation. Aconitine is another agent which has its indication, if there is general elevation of temperature. In all these cases, I find that the initial calomel purge, followed by a saline laxative, seems to make the subsequent treatment more effective. I have not employed the lactic-acid bacillus as a local application in the rheumatic sore throat, but it would seem to be indicated.

In the earlier stages of tonsillitis, I have found nothing which gives me better and quicker results than the tonsillitis compound,

consisting of aconitine hydrobromide, gr. 1-3000; bryonin, gr. 1-500, atropine sulphate, gr. 1-1500; and mercuric iodide, gr. 1-100. In the beginning, a tablet containing the above is given every half hour, until the atropine-effect is shown, and then at less frequent intervals, to hold such effect. In several individuals in whom tonsillitis had previously gone on to suppuration the relief has been marvelous, the inflammatory process receding rapidly and with absolutely no pustulation.

I have in mind one patient who had quinsy with great regularity, for years, but would not submit to tonsillectomy, and who found relief, whenever his throat became the least bit affected, by the prompt use of the above combination. For the past four years, he has not had a single attack of quinsy. He told me that he is never without his tonsillitis tablets. As a synergist to the combination named, I paint the affected tonsil with tincture of iodine, if seen early, and this seems to have a good effect.

When an *acute laryngitis* is seen early, the initial purge of calomel, followed by a saline laxative, is given; and this, followed by aconitine, hyoscyamine, and strychnine at frequent intervals, to obtain the aconite effect as early as possible; and this, in combination with iodized calcium, 1-3 to 1 grain, at intervals of from two to three hours, will, as a rule, abort the attack.

For its local effect, a menthol gargle gives temporary relief; but, so far as a curative effect from gargles may be concerned, I have always had my doubts. Be that as it may, the gargle of menthol, in combination with alkalis, has a soothing effect, and, whether it assists in overcoming the condition or not, should be used because of at least the comfort given the patient.

The tonsillitis combination mentioned above is also useful in this condition. Nuclein, through its power to increase leukocytosis and thus to favor destruction of the infecting agents, should be indicated in every case. Calcium sulphide, as a general antiseptic and to control the exudate, should be pushed to the limit in all such cases. Hot compresses to the throat (epsom salt) give relief, as also do inhalations of medicated or plain steam. Both act as relaxants and favor a lowering of the congestive process. Potassium dichromate granules, to be dissolved on the tongue, are effective in some instances.

In *acute pharyngitis*, the initial purge is invariably indicated, preferably with calomel and podophyllin, followed by a laxative

saline or castor-oil. To relieve the local congestion, atropine and aconitine, pushed to effect, at short intervals of dosage. These also act to overcome any general rise in temperature. Potassium dichromate is also indicated in such condition and may be given either in solution or a tablet of 1-64 grain may be dissolved slowly on the tongue every hour or two. Iodized calcium, gr. 1; mercuric iodide, gr. 1-64; strychnine arsenate, gr. 1-12S; phytolaccoid, gr. 1-6; with nuclein, m. 2, may be alternated with the potassium dichromate, with good effect. Cold compresses of epsom salt, to the neck, changed every hour or two, give comfort to the patient and assist in the effect of the other remedies. If the atropine and aconitine are administered early and pushed to full therapeutic effect, this condition is usually aborted.

There should be frequent examinations, to ascertain the infecting agent; and a bacterin, either stock or autogenous, may be added to the treatment, as outlined above, with good effect. Always suspect and look for diphtheria, and, if found, use the antitoxin in such dose as will be properly effective.

Some will tell us that *catarrhal croup* is invariably diphtheria; but, it is my belief that we may have a croupy sore throat, due to the *micrococcus catarrhalis* and *streptococcus*, and without the presence of the Klebs-Loeffler bacillus. In croup, no harm is done if diphtheria antitoxin be given, and this should be administered if there is the least doubt.

However, in the simple catarrhal form—nondiphtheritic—iodized calcium, 1-3 grain in hot solution, at intervals of from ten minutes to a half hour, seems to be a specific. If there is dyspnea and the congestion is marked, apomorphine, hypodermically, or lobeline, either hypodermically or internally, are indicated, alternated with iodized calcium. These act to overcome the spasm and to relax the throat markedly. Cold compresses to the throat are also useful in croup and give the child considerable comfort.

It goes without saying that the bowel should be emptied and thereafter kept clean. We know that many cases of croup are seemingly caused by previous heavy meals and a consequent retained residuum in the alimentary canal. After the initial purge, the intestinal antiseptics should be used, so that the bowel may be rendered and kept clean. Invariably bear in mind the possibility of diphtheria, in all instances, and be ready with antitoxin when there is the least suspicion of that disease.

This does not, of course, comprise all the throat conditions encountered, but is a list of the commoner ones—the ones we see in our everyday practice.

GEORGE L. SERVOSS.

Reno, Nev.

ECHINACOID IN SORE THROAT

When treating sore throat, try echinacoid in connection with other remedies. Then, after the acute attack has subsided, for the reduction of the local congestion, try calcarea fluorica 7x and sodium mur. 3x. They may be given in combination.

D. E. CRIPE.

Hilliaburg, Ind.

THROAT TROUBLES AND HOW I TREAT THEM

Follicular Tonsillitis.—First clean out the bowels thoroughly with calomel and podophyllin followed by a laxative saline. Occasionally, instead of the calomel combination, I give two compound cathartic pills. For reduction of fever I administer the defervescent compound (aconitine, veratrine, and strychnine arsenate), together with atropine in small doses. When indicated, I also prescribe bryonin; and I likewise give 5 grains of sodium salicylate (natural) hourly for a few doses. Calcium sulphide, 1-2 grain, and echinacoid, 1-2 grain, are administered every hour for the first day, and after that every two hours. As a gargle, I prescribe a solution of 5 to 10 drops of carbolic acid in an ounce of water, a little glycerin being added. This must be employed *hot*. I generally swab the tonsils once or twice with a 10- to 20-percent solution of silver nitrate, to be neutralized immediately by gargling with salt water.

Suppurative Tonsillitis.—The treatment of this form of sore throat is the same as the preceding, except that I open peritonsillar abscesses just as soon as pus forms.

Laryngitis.—If there is elevation of temperature, I reduce it with the defervescent compound granules, as described above under follicular tonsillitis. I also push emetin and calcidin, or sometimes apomorphine and calcidin. The bowels are kept open with the remedies already advised.

Diphtheria.—I swab the throat with the strong silver-nitrate solution, as described under follicular tonsillitis. Antitoxin is given as early as possible and in large doses, 5000

units being injected even in the very mild cases. In all the more serious cases I administer 10,000 units or more. To immunize members of the family, I give each one 1000 units of the antitoxin.

H. NOBLE CRANDALL,

West Springfield, Pa.

PERSONAL INSTRUCTION IN NON-SURGICAL SPECIALTIES

We have just learned from Dr. G. N. Murphrey, of Paducah, Kentucky, that he is contemplating giving, at his home, a week's course of practical instruction in the non-surgical treatment of cancer, hernia, and hemorrhoids. It is probable that this course will be given in the week beginning February 20, although we presume this is subject to change. Readers of CLINICAL MEDICINE will recall the two papers on cancer that Doctor Murphrey has contributed to this journal. Anyone interested should write directly to the doctor.

PECULIAR GLEANINGS FROM THE LAITY

I guess the old saying that "we never get too old to learn" is as true now as ever before. Here is a new one for me; however, it may be very old:

A lady who had been married for a period of ten years and had given birth to one child, a son, came to me in a pregnant condition and asked me to attend her in her next confinement. So, I ascertained as nearly as possible all of the facts regarding her former pregnancy and labor. She told me that the former physician who had charge of her during her former pregnancy and labor, every morning for three months before she was confined came to her residence and "used a stretcher on her to make labor easy." I guess I am a long way back on the shelf, but I have to admit that I have never heard of such a procedure. If I am behind the times, will someone put me right and tell where I can obtain one of the "stretchers"?

I was listening to a conversation between two ladies, over the telephone, and one of them had a child that had "croup," and the mother was telling the other one about it. The neighbor, who is always ready to give advice regarding the practice of medicine, told her that, if she would "tie a silk cord around the child's neck it will not have the croup, and, if it already has it, it is sure to relieve it." She said, "If you have not the

silk cord, just take a piece of silk cloth, and it will do about as well; but, really, it should be the cord." Strange that the men who have spent years in research have not discovered this fact—if fact it is.

I overheard a conversation between two ladies in regard to the cure of neuralgia. One of the parties was a sufferer from periodical attacks of the disease, and her friend was glad to tell her that all she had to do was to "procure a nutmeg, bore a small hole through it, run a string through the hole and tie the string around the neck," and she would "never have trouble again." She also stated that it would relieve the asthma. I have never tried it, but I can not believe it has any therapeutic effect on either disease. Do you?

A colored woman came to my office a few days ago and brought a child with her who had been sick about two weeks. I found that she had enlarged tonsils from inflammatory deposits, and this is the treatment that she had been giving the child: "Doctor, I heard that cow-chip tea, made from dry chips, would relieve the throat trouble, if the tea was made strong; also to apply a mass of the fresh 'pile' to the angles of the jaw, and it would always give relief." I asked her if the tea was strong, and she said it was, as she would taste each new batch before giving it to the child. I ascertained that the patient had drunk about three gallons of this abominable stuff before I saw her. I told her that I had always heard that the tea was to be taken by the *mother* of the child, instead of the child, but advised her not to do it, as she might get the "foot-and-mouth" disease after imbibing freely.

How many times have you been waiting for the uterus to contract and bring on pains for the expulsion of the placenta, after the child had been born, and some "kind lady" would say, "Blow in your hands and the afterbirth will come away right now"? More information for the M. D. from the "laity."

It is going the rounds in this country that, if you have warts, all you have to do is, "tie a knot in a *flax* string for each wart on the body, then 'spit' on the string and bury it at the root of an ash-tree, and the warts will disappear as if by magic." If this will do the work, why not treat them in this way these hard times, instead of using our drugs? Economy!

Have any of the brethren learned how to "tie off" the chills? If not, they are welcome to the following, and may profit thereby: Have

the patient go to a dogwood-tree and tie a string around the tree, then tie a knot for each chill he has had, then walk backward from the tree as many steps as he has had chills, then turn around and go away from the tree, and he will never have another chill—so I have heard.

If you ever have a patient with nosebleed, tie a string around each little finger, and it will stop it—they say.

I am living in a community that has the average enlightenment, but these things are still in their minds, and we can not tell how many generations will pass before they are obliterated. I do not think there is enough teaching by the medical men of our country, or these superstitions would not persist. When I hear such rot as the above, I discourage it and ask people to reason in the matter, and see if there is any change made in disease by such foolish sayings or doings.

ARKANSAS.

NEW METHOD OF TREATING DIABETES

The new treatment for diabetes developed by Dr. Frederick M. Allen of the Rockefeller Institute for Medical Research has won the indorsement of a number of prominent physicians in this and other cities where it has been tested at hospitals. It is known as the starvation-treatment. Dr. Elliott P. Joslin, of Harvard Medical School, who is also connected with the Nutrition Laboratory of the Carnegie Institution has expressed his unqualified approval of this treatment. Another enthusiastic indorser of the "starvation-treatment" is Dr. Lewis Webb Hill, of the Massachusetts General Hospital, where the method has also been tried out for about a year and has been adopted for general use. Doctor Hill recently published a small book, to assist the general practitioner in adopting the "Allen treatment." This book tells of the results obtained in the Massachusetts General Hospital and presents a series of the diets used at the hospital.

It is no exaggeration to say that the advance in the actual treatment of diabetes mellitus during the twelve months just passed has been greater than in any year since Rollo's time. It seems that Allen's modification of the classical treatment of diabetes has been in use for only a comparatively short time, but it is already clearly proved that he has notably advanced the treatment of the disease. One of the difficulties likely to prevent the wide adoption of the treat-

ment at the present time involves the detailed knowledge of food composition and calorie value.

In carrying out the Allen treatment, the physician must think in grams of carbohydrate and proteid—it is not enough simply to cut down the supply of starchy foods, but he must know approximately how much carbohydrate and proteid his patient is getting each day.

Doctor Hill describes the treatment administered at the Massachusetts Hospital. The patients are kept on ordinary diet for the first forty-eight hours after entering the hospital, so that the severity of their cases may be determined. They are then put to bed and given no food whatever, except whisky in coffee, until they are sugar-free. Under this method, the system is very rapidly rid of sugar, all evidence of it disappearing in two or three days in most cases, and the longest length of starving any patient is four days. In a very few cases, however, eight or nine days were required; but this did not seem to injure the patient. When the patient is sugar-free, he is allowed to eat small quantities of vegetables.

When this meager diet is commenced, the vegetables must be boiled in three changes of water, to rid them of as much carbohydrate as possible. A glance at the diet of a patient after the original starvation shows that there is little danger of overeating.

Breakfast consists of 4 tablespoonfuls of stringbeans and 4 tablespoonfuls of asparagus, with tea or coffee; dinner, of 2 tablespoonfuls of carrots and three of spinach, with tea or coffee. To make up for the short rations earlier in the day, the patient is allowed 12 slices of cucumber and 6 pieces of celery at supper, with tea or coffee. The diet is gradually increased to include cabbage and onions, and in the third stage to include bacon and other foods.

One of the new features of Doctor Allen's treatment is, that the patient is never allowed to return to what is generally considered a normal diet. Previous to his development of the new treatment, it was generally considered by physicians that recovering diabetes-patients should take on flesh, to help build up resistance against "wasting disease." Doctor Allen argues that a patient should remain under weight always, even after recovery from the disease, to prevent a recurrence of its symptoms. In 44 patients admitted to the hospital, who were chosen because their cases were the most severe of a considerable number of applicants, it was

proved that it is possible to eradicate completely all traces of sugar by means of the starvation process. The greater part of the patient's stay in the hospital is devoted to the simple method of controlling his own condition through diet and in keeping down his weight.

Doctor Allen concludes that patients generally accept the radical treatment, with its quick relief, in place of weeks or months of privation heretofore used in stopping glycosuria.

L. K. HIRSHBERG.

Baltimore, Md.

[The Allen starvation treatment of diabetes now has "the center of the stage," and it is being very warmly praised. We believe every physician should be familiar with it—but should be cautious in trying to put it to the test. Somehow, it brings us back to that old, old lesson, which we have been trying to drive home all these years, i. e., *the importance of the alimentary canal as a factor in producing and perpetuating so many of the serious diseases.* It strengthens our faith in "cleaning out and keeping clean"—in the judicious use of simple laxatives; in the administration of intestinal antiseptics; and in the use of such remedies as cultures of the Bulgarian bacillus. "Look to the bowel!" That will continue to be the first word of the thoughtful physician.

In a recent number of *The Boston Medical and Surgical Journal*, Doctor Allen has suggested another somewhat revolutionary idea regarding diabetes. He believes these patients should be given plenty of exercise—not exhausting exercise, but enough to keep them hard and make them relish their meals. Walking, rowing, playing tennis, golf, are some of the things he suggests.—ED.]

CURE OF IMPETIGO.—REMOVING IODINE STAINS

Last week I had a case of impetigo to treat. I tried all the remedies that "ought" to have helped, but didn't. I remember reading in the CLINIC, a month or so ago, the suggestion to use oil of turpentine. I decided to try that, for the condition was getting bad and the family was getting uneasy. Well, when I took the turpentine dressing off, the impetigo was much improved, and thereafter it was easily cured up with dusting-powders. That one issue of CLINICAL MEDICINE surely paid for a year's subscription—although I had to accept in payment from

these people a load of wood. I forgot to say that I kept the patient saturated with calcium sulphide.

I have found a new use for calcium sulphide, namely, to remove iodine stains. Just dissolve a tablet of the sulphide in a little water and rub this on the skin stain. The color comes off quicker than by any other way I have tried.

F. J. AUSTIN.

White Cloud, Kans.

MORE TREATMENT FOR MALARIA

Apropos of Doctor Spiedel's letter about the cure of malaria without quinine, published in CLINICAL MEDICINE some months ago, I wish to put on record with you a method I used successfully in 1898, when it was rather common, in this section, to find a number of soldiers crippled with Cuban malaria of a very obstinate type.

A captain of the 71st Regiment of the N. Y. National Guard, who had been treated in the ordinary way for months, supplied the first case. He had had two "congestive chills" that nearly proved fatal. During convalescence, I had him come to my office for tonic static electrical treatments and he promptly got strong and well. He was also taking quinine and tablets of iron, arsenic, and strychnine.

My next case was a "rough-rider," and he made such a prompt and marvelous recovery, after months of the usual treatment and persistent debility, that the news of it spread rapidly, and officers and privates of volunteer and regular regiments flocked in for "the cure." I tried to arrange with a young doctor of the neighborhood, to make blood examinations in all these cases, as I was too busy to do this myself, but he failed me. There was but one case where an examination was made, and he was reported to have had malarial plasmodia distinctly before he came to me. All symptoms disappeared after three treatments.

I have never reported these cases as I had not been able to get the blood tests made before and after treatment. I have used this method often since that time, with success and satisfaction to myself, but as it is somewhat severe, not everyone will stand for it, even to be cured. The treatment is as follows:

For about five minutes, I draw off from the patient, who is heavily surcharged with static electricity, big, percussive sparks with

the negative "large ball" electrode, being careful to avoid all tender spots. This sudden discharge of accumulated electricity in the body seems to give the malarial growth such a sudden shock as to destroy its vitality. No other treatment is required. Usually, the malaria and resulting debility disappear after the first treatment; but I have never felt satisfied unless six or seven of these treatments have been administered on alternate days.

All of my patients (forty-five or fifty) were anemic, much enfeebled, and subject to chills recurring at varying intervals (every 7 to 30 days). After treating the first three or four cases in this manner, I discarded all medication, other than the occasional use of a laxative tablet of aloin, belladonna, strychnine, and cascara. The recovery of health and strength has always been prompt and lasting in the cases I have been able to follow up. They all quickly lose their muddy complexions and anemic appearance, and acquire a good healthy color.

I would like very much to learn if others have had experience with this method of non-medical treatment of malaria, and if so, of their results.

THOMAS R. SAVAGE.

New York City.

THE CAUSE OF SCURVY

In the November number (p. 1068) of CLINICAL MEDICINE, Doctor Evans makes the assertion that potassium-poisoning is a cause of pellagra and scurvy; however, I beg leave to express a strong conviction that so far as scurvy is concerned he is mistaken. In a paper published as long as twenty-five years ago, it was conclusively demonstrated that in every instance of an outbreak of scurvy the salted meats in use emitted a stinking odor during cooking (namely, salt beef and pork and, in the cases occurring at the York Factory Hudson Bay Company port, north of Winnipeg, salted wild geese); while, on the other hand, with the same diet of beef, pork, and goose, salt-pickled, but free from decomposition-taint, no scurvy occurred among those people.

Now a word concerning the York Factory cases, the only place in the Northwest where scurvy was known to exist. The wild geese were shot in great numbers during their fall migrations. Their entrails were removed and then a little salt was rubbed inside each bird, which toward springtime would begin to give off a strong smell while being cooked.

The proof was positive that when this decomposition became noticeable scurvy soon followed a continuance of this diet. Please observe: nothing but salt, chloride of sodium, was used—no potassium nitrate whatever.

Furthermore, in the same paper I pointed out that the so-called "blackleg" that affected "lumberjacks" and railroad navvies living upon a diet of salted pork, principally, did not show itself until after the pork or bacon had become rancid, or rusted, and stunk when being cooked.

In other words, then, scurvy is a ptomaine-poisoning, more or less chronic, and is not caused by the small amounts of potassium salts present in pickled meats. I venture to say that the 12-pound ham Doctor Evans' patient consumed inside of ten days was "high" and unfit for food. The salting-process had but retarded decomposition, not prevented it.

A. S. THOMPSON.

Hawkesville, Canada.

MAGIC ACTION OF EMETINE IN AN INFANT BLEEDER

A little incident with emetine in the case of an infant bleeder may interest you.

Recently I was called to attend a baby, born thirty hours before, for what appeared to be a large bruise, with indurated base, on the left shoulder, arm, and chest. There were also one or two blue spots like鸟shot on the opposite arm. The birth had been normal. The child weighed ten pounds and seemed normal; cord was normal.

The next morning I received a note that the babe was bleeding to death from the navel. The cord had separated, and twice before my arrival a large pad of surgeons' cotton, five layers of canton flannel, the flannel skirt, dress and blanket had been saturated with the blood. A scratch from its own finger-nails on the left cheek and the right eyelid were bleeding—the cheek so freely that the dress, neck, and shoulder were covered with blood.

As soon as possible part of a granule of emetine was injected into the thigh. Instantly, as if by magic, the hemorrhage ceased. Then the mother was given one emetine granule every two hours until the babe was nauseated, then one granule three or four times a day. There has been no further trouble of any kind and baby is gaining in weight and general appearance rapidly.

Please tell me what further treatment you would advise to prevent this little one becoming a "bleeder." I am satisfied that an all-cornmeal diet (freshly home-ground) for the mother during six weeks before the child's birth was the direct cause of this trouble. This is the ninth child born alive to this mother in thirteen and a half years. Her sixth child died when forty-eight hours old, bleeding from every mucous membrane, and it was spotted from head to foot. In this case also poverty had been responsible for an exclusive home-raised corn diet. The mother then had been compelled, while in labor, to look after their only and pet horse which had just cut a vein in the neck on barbed wire. The other children are all living and fairly healthy. Parents were both born in Norway.

O. E. W. SWAN.

Conant, Fla.

[It seems possible that there is an inherited tendency to hemophilia in this family. This "unit-character" is said to be transmissible. However, faulty diet may be a predisposing factor. Generous feeding, giving plenty of lime-carrying foods, is certainly desirable. We would also prescribe calcium lactate or chloride.—ED.]

CURRENT COMMENT BY A COUNTRY DOCTOR

Is It Also Cause of Ectopic Gestation?—An article in *The Woman's Medical Journal* for June, 1915, in which Dr. Bertha Van Hoosen discusses the psychological aspects of painless childbirth, is intensely interesting, but, unfortunately, seems of more value as academic reasoning upon the many-sided question of future race building than as an aid to prophylaxis of woman's present-day needless labor anguish. If, as the author of the article referred to, in common with many others, considers sexual intercourse for other than procreative purposes (or, rather, intercourse on the part of a pregnant woman) to be largely the causative factor in painful childbirth, then the error is mainly a racial one, individual fault being but secondary to it. However, carefully gathered statistics relating to births occurring when during her pregnancy the husband had been absent from the wife of undoubted fidelity (Europe at present, should furnish data of this kind), as also of those illegitimate births in which the "only once" at the behest of the despoiler was the cause of pregnancy, would be instructive. Comparison of the character and duration of

childbirth among those living the ordinary married life of the western world with those limited sects teaching sexual abstinence during gestation and lactation, on the one, and, on the other, with harem women in Moslem countries, ought to yield valuable data.

It is to be feared, even were a complete and general education to be imparted upon the subject of sexual abstinence, that for the next few generations a tube of "H M-C," a bottle of chloroform, and a little vaseline for anointing the woman's lips will still be advisable emergency equipment for the humane accoucheur. Fortunately, however, sex-subjects are being treated, even by the laity, from a more scientific and rational standpoint, and exaggerated sexuality eventually will cease to be a factor in life.

Right now elimination of sexual intercourse for pleasure—innocent or otherwise—is far from realizable, and it is to be feared that in the present stage of human evolution most male advocates of the new teaching either are morally on a much higher plane than the average or are men in whom "senility (or unvirility) is mistaken for godliness." Again I say that it is fortunate that the time is coming when sex-science may be approached through general literature in a rational way and a writer may treat the subject with a candor at least approaching that of Holy Writ, if not that of Shakespeare, without being accused of being a ribald imitator of Dr. Francois Rabelais.

Under some definite natural law, not yet discovered by any Mendel or Schenck, early in intrauterine life about half the humans become females. Since it is being more and more realized that this latter half, selected under that mysterious law, should have an equal say in all matters affecting the common weal of the race, present and to come, woman herself doubtless will largely determine the details of her emancipation from useless childbed agony, as well as from other factors detrimental to the coming life ideal. This I believe, although not agreeing with those feminist enthusiasts who contend that one result of the war will be the placing of woman back to the position of superiority in the community held by her in the remote era of the matriarchate, or mother-gens.

No, sister! All this talk about your being divinely sentenced to reproduce the race in travail is based upon misunderstood Scripture, and I call it unscientific theological rot. Your curse is purely imaginary. Yes, and I'll go further. I'll take my syringe, my H-M-C, and a few other articles of merit, and

then proceed to prove it, as will thousands of other doctors. Then I'll let you have the ballot and vote, with me, for a fuller cooperation all around. But that is as far as I shall go in this direction. I'll be like the Arkansas legislature which, when petitioned that it change the name of that grand old sovereign commonwealth, from Arkansaw to Arkansas, declined to do so. There I draw the line, and refuse to admit the superiority of women.

In connection with this subject, it has occurred to me that the hyperemia induced by sexual intercourse during early pregnancy may be the frequent cause of ectopic gestation. This condition does not occur in the animals, or, at least not often, so far as known; and it may be that disturbance, through copulative excitation, of the delicate physiological function governing the descent of the fecundated ovum, not being the rule as in humans, is the reason. The explanation of the pathological condition (ectopia) here offered should be as plausible as any yet presented. Originality is not claimed for the idea; still, I have never seen it put forward.

The Senecio-Aureus Patient.—She had reached puberty, without full establishment of the functions of adult life. Various iron preparations had been prescribed, but, still, the patient remained chlorotic, even though some of these preparations contained arsenic. There was a greenish cast to her skin, the nails did not show true pink, the blood-count was deficient. Dysmenorrhea and amenorrhea alternated. The catamenial discharges often were intermenstrual and always wanting in color. The patient finally was withdrawn from the care of physicians and then took divers of those wonderful curealls advertised to be equally beneficial for "dawning womanhood" and for delayed menopause (*vide* testimonials run next to straight reading-matter in the daily and weekly *Boilerplate*). After a while, a physician again was summoned, on account of an acute attack of dysmenorrhea.

After learning of the previous watery discharges, intermenstrual in character, and because of her general chlorotic appearance, as well as the statement of the patient that she experienced frequent sensations as of "something heavy" in the pelvic region, senecoid was prescribed, in association with the immediately indicated remedies, namely, anemonin and viburnoid. This, after a careful examination, which revealed the typical symptoms of dysmenorrhea in an unusual degree, for this particular type of anemic patient.

The treatment was continued during two intermenstrual periods, and now that "greensickness" is gone. Iron, quinine and strychnine had been given previously, and was well indicated. The same combination, less the strychnine, (in this case contraindicated) was given in conjunction with the senecoid. This was quinine ferrocyanide. *Senecio* is one of those drugs which, although not containing an active principle strong enough to produce toxic symptoms, exerts a well-defined and positive specific influence over the symptom-groupings that it fits. Users of the active principles, Eclectics and Homeopathists all agree as to the efficacy of this remedy prescribed when its indications are present.

To assert that a drug is "inert" because it contains no active principle strong enough to exert toxic effect, hardly is logical. How can a plant reproduce itself in the age-old struggle for the survival of the fittest if it be inert and incapable of producing subtle chemic changes in the materials with which its environment has surrounded it? If capable of carrying out its own life-processes, dare I say that it is incapable of modifying physiological or pathological change in another organism? In our present outline knowledge of the cruder processes of physiological chemistry (crude as compared with the vast undemonstrated), have we the right to condemn empirically well-proven agents? And these thoughts bring up other thoughts concerning the assaults upon echinacea.

Just before frost caused the representatives of the venomous *crotalus* to start their winter hibernation, I attended a negro bitten by one of these rattlers. The fang marks were visible on the foot, there was great swelling of the leg, the nervous and circulatory symptoms of snakebite were characteristic; worst of all, "We didn't kill de snake, an' dat make hit wo'se, yes-sah." He was seen three hours after the bite, hence, too late to open the wound and apply potassium permanganate or to suck the wound. Echinacea was the first thought. The form in which the drug was available was echinacoid, the concentrate, and this was triturated with alcohol and glycerin and applied under oilsilk clear up to the knee. The instructions were, to leave the dressing on for four hours and then redress with the same preparation, after soaking the leg in hot magnesium-sulphate solution. Internally, strychnine valerate, capsicum, cactoid, and echinacoid were given. Whisky was prohibited, and the bottle containing the proscribed article was condemned to destruction.

That darkey got well—and, of course, I hear the medical nihilist say that he would have recovered, anyway. Perhaps so, the danger from the bite of our North American snakes being exaggerated. But if anyone will kindly convince me that *echinacea angustifolia* is inert, it will save the expense of renewing my supply. *Echinacea* remains the emergency-remedy in blood-dyscrasias and infective processes; not to the exclusion of biologic therapy, but, still, it remains, as before introduction of this invaluable therapeutic advance, the instant reliance of the obstetrical doctor. This is not a "snake-story," but a clinical statement susceptible of proof.

If the use of these (by some) alleged inert remedies is continued by men acquainted with the therapy and the chemistry of the newer synthetics, as well as with biologic therapeutics, there certainly must be some good ground for it.

Kerosene.—Relative to the very interesting article by Dr. Rigney and the editorial comment upon it in September CLINICAL MEDICINE, I frankly confess to more knowledge of the chemical possibilities of kerosene than of its therapeutic uses. Petrolatum and liquid paraffin I use extensively, but plain coal-oil has received at my hands probably unmerited neglect. I remember having been informed by a fellow practitioner, some years ago, that kerosene constitutes a splendid injection for gonorrhea, safe and efficacious, only the lack of color and its bad odor being objections to it. I then suggested coloring it with alkanet and disguising the odor with some other strong-smelling oil. The thought of giving it a trial was dismissed on thinking of the complex hydrocarbon group, with marshgas and incidental sulphur compounds to be dealt with in a commercial product derived from various sources, with only its illuminating power and explosive possibilities regulated. However, a product of uniform illuminating power and meeting explosive restrictions, such as modern coal-oil, should be fairly free from danger and has possibilities worthy of investigation as a whole as well as in the form of pharmaceutical separation.

In the use of the commercial kerosene except as a local application (that is, for enemas), doubtless immediate elimination from the body should be looked to. For high enemas, probably liquid paraffin would have served the doctor as well. The efficient carrying-out of high-enema technic, including position of patient, massage, and his resource efficiency in improvising a long colon-tube with which to use his bulk lubricant may have

been the cause of Doctor Rigney's success. Resource and efficiency: this is admitted while we eliminate discussion of the complex methane-product. Liquid paraffin can be used both ways in the alimentary product, without there being danger of absorption or of bad effects from some uncertain hydrocarbon. Therefore, when at hand, liquid paraffin can be used with safety, and it is as easy to carry in a buggy as the kerosene.

Cases of poisonous effect from the internal use of coal-oil are on record; and quite a serious one, from the free domestic administration to a child, recently came under my treatment.

Federal Licensure.—Let any physician of a dozen or more years' practice take the next set of state-board questions coming to his hand. Use the typewriter, pencil or pen and go at it, allowing no "self-cheating." Just call on the latent power of the memory and go to it bravely. Then mark the papers, with resort to textbooks, as if they were those of someone else. How many among us will make the required percentage? That is, unless for some reason two or three branches have been either specialties or hobbies of his. Try it, doctor, and then do not be surprised at the number of those "A" and "plus A" lads that "fell down." It will hurt no elderly physician to examine himself seriously, but it will help in two ways. The number of things that result in individual professional weakness will be discovered, as also the difficulty of passing a board examination when exigencies of existence require removal over the state-boundary lines.

It is safe to say that the practitioner of a dozen or more years' experience will have a pretty hard proposition, unless for some reason he has kept up on the technical branches. If a state requiring reexamination gives a few points of credit for years of practice they sure are likely to be needed—some mighty capable men have difficulty in remembering the rigamarole by which they placed even the carpal and metacarpal bones.

Federal licensing doubtless is coming—and should come. However, it should be a fair proposition to give older men an even break. It seems certain that a federal board, or any other board, could, by oral examination alone, discover a man's thorough fitness to continue the practice of medicine if he should desire to move.

It is quite true that doubtless there are a limited number of men who have received state licenses under former lax requirements, but who are not up in their profession and

have allowed themselves to become fossils or worse. On the other hand, there are many men who received good grounding—all that any school can ever give—under the careful instruction and personal supervision of the teachers of the older and smaller schools (many of them now defunct). These men have builded well on their foundation and are strictly modern, first-class physicians, even if some of them would have to study up pretty hard before they could pass an examination on modern chemistry and upon bacteriological details.

Alabama has, as yet, no reciprocity provision, but I believe that any old practitioner who has gone against its state board will agree with me that when he did he had the hardest few days' work he ever attempted, and that the certificate ought to settle the matter of capability anywhere: this even if he did make a creditable percent. He will also be convinced that the certificate of a modern state board should be good wherever the flag flies, also wherever international professional courtesy prevails.

A. L. NOURSE.

Sawyerville, Ala.

EMETINE IN SOME CASES OF TUBERCULOSIS

Case 1. I began treatment for tuberculosis about a year ago. The man had been sick about two years and, as we all thought, was on his last lap of the journey of life. I began giving him supportive treatment—codliver-oil, with hypophosphites, nuclein, and the like. He improved somewhat and began to increase in weight, so, I concluded to begin very carefully with the tuberculin-treatment, in conjunction with the foregoing. For a while he continued to gain in weight and strength, so that he was able to ride alone in his automobile and to walk a considerable distance every day.

During all this time, I had the greatest trouble with his stomach and bowels. His cough was better, the right lung began to heal, but the stomach and bowels continued bad—either being constipated or too loose. To be sure, I had given him everything I could think of to promote elimination, using the mild chloride of mercury and saline laxative, the intestinal antiseptics and digestives, but seemingly could not make any progress. Finally, I stopped the tuberculin, in the hope that he would gain strength;

but the kidneys, stomach and bowels continued to trouble him, indeed, grew worse.

Then I began giving emetine hydrochloride, 1 grain every day, stopping all other treatment, except for an occasional small dose of cascara. In a few days, he began to improve. I continued the emetine for about three weeks, once a day, and for four weeks every other day; and now, after four weeks that he has taken nothing but good nourishing food, he is steadily improving, with only about one-half of a lung to breath with. He will not recover, but he will live at least a year longer—barring accidents. I am convinced that emetine hydrochloride will take care of all tuberculous conditions that relate to the intestinal tract.

Case 2. Woman. Strong tuberculous reaction with the Moro test, also specimens of fecal matter show tubercle-bacilli. Bowels continually constipated and about once every two weeks there are quantities of pus and blood in the fecal discharges. Catarrh of the nasal tract, with very offensive odor.

Treatment: Catarrhal vaccine (combined), every fourth day; emetine hydrochloride, 1-2 grain. After two weeks' treatment, she is better in every way; tongue clean, appetite good, no tubercle-bacilli in fecal matter. She is taking nuclein, 15 drops of the solution three times a day, under the tongue; also codliver-oil with hypophosphites. She takes a pint of cream and three or four eggs a day, and is doing finely, although two weeks ago she hardly ate enough to sustain life.

Einetine is taking care of the intestinal tract, enabling her to take plenty of food, which is the prime factor in the treatment of tuberculosis. I shall probably give tuberculin when she gets strong enough. This woman will get well.

T. M. STEWART.

Canistota, S. D.

TWO OBSTETRICAL ANOMALIES: RETAINED AMNIUM AND RETAINED LOCHIA

The following two experiences may interest some of the readers of CLINICAL MEDICINE:

1. A woman, half-breed, 21 years of age, primipara, gave birth to a boy at 4:10 o'clock in the morning, no doctor being in attendance. In the evening I was called, because the "rest" had not come as yet, and reached the patient's home at 8 o'clock. The woman was lying on the floor; she was looking well, but was in pain.

The first thing I discovered was, that her abdomen was still as big as though she had not yet given birth to the child. Was this a case of internal hemorrhage? was my first thought; but the face and pulse indicated that it was not. The next suggestion was, that it was a case of twin pregnancy. However, palpation and auscultation convinced me to the contrary. Also, the patient had passed a sufficient quantity of urine, both before delivery and afterward, which satisfied me that the protuberance was not due to retention of urine. What, then, was it? A careful vaginal examination disclosed that the placenta had passed out of the uterus and was lying in the vagina. Gentle expression brought it out complete. And, still, the abdominal enlargement persisted.

The patient had already been ordered to bed, and I now introduced a uterine dilator into the os. Slight dilatation was followed by the flow of a large quantity of amniotic fluid. The "tumor" vanished, the pains disappeared, and the patient immediately felt relieved. This was two years ago. The other day I saw the woman in my office, and she complained about not having become pregnant again.

2. A woman, in labor, age 20, primipara, who since her first menstruation at 16 had suffered from acute pains at every period. The os was very slow in dilating; however, the child was born normally, although the placenta was adherent and a ring formed in the middle of the uterus. The uterine flow was normal the first day, but on the second day the quantity became very small and on the third the discharge disappeared entirely. That night there was a slight rise of temperature. I tried uterine douching, but in order to introduce the fluid dilatation was necessary. A large quantity of offensive discharge followed, resulting in an almost immediate fall of temperature to normal. However, the next afternoon the discharge ceased again, and there was none at all for the two succeeding days, this being followed again by a rise of temperature up to 101° F.

Fearing the possibility that shreds or fragments of the placenta had been retained, I decided to curet, but again found the os uteri tightly contracted. Forceful dilatation was followed by a discharge, as before, but the uterus proved clean.

The temperature again fell to normal, to my great satisfaction. In order to prevent reaccumulation of the fluid, I left a rubber drainage tube in the uterus, but the flow did not increase, so that twice a day the os had

to be dilated in order to permit of irrigating the womb, until finally the discharge ceased.

I tried several remedies calculated to relax the contracted os, but apparently without avail. Was there anything else I could have done, in view of the fact that the condition was not discovered previous to pregnancy?

EMILE BOISSONNEAULT.
Grouard, Alberta, Canada.

[From the Doctor's history, it seems probable that in the first case mentioned there was a very precipitate labor, the fetal head being forced into the os so quickly as to block it completely and thus prevent the escape of the amniotic fluid. After the birth of the child, there must have occurred an immediate blocking of the uterine outlet by the placental membranes, followed by contraction at the cervical ring, thus preventing the escape of the fluid. Perhaps someone can suggest a better explanation; if so, he is invited to favor the "family."

Case 2 seems to be one of hourglass contraction, in which, happily, the placenta was delivered without postpartum hemorrhage setting in. From the Doctor's history of the case, it seems probable that there existed an obstruction-ring prior to pregnancy; this ring, moreover, being responsible for the painful menstruation of which the young woman complained.

We shall be very glad if any reader of CLINICAL MEDICINE will comment upon these cases and suggest an improvement of the Doctor's technic.—ED.]

CYSTS OF THE TONGUE IN THE NEW-BORN

Cysts of the tongue in the newborn are not of common occurrence. Occasionally we do encounter in the literature reports of such cases, but in most of these instances there exists considerable doubt as to the exact nature of the condition. The writer has met with two definite cases of cysts of the tongue in the newborn, and in both the type of cyst proved to be the same.

Case 1. The babe weighed 9 1-2 pounds and, apparently, was sound. The cyst on the tongue was not noticed until an effort was made to cleanse the child's mouth. Then a hard and nodular mass was felt, about the size of a hazel-nut. Upon closer examination, it was found that there were two small masses instead of a single large one, and both opening through a common channel.

The masses were plainly seen on the anterior surface of the tongue, just beyond the tip.

Case 2. This was an 8-pound baby, robust and sound, but its difficulty in breathing gave immediate suspicion that something was wrong. Examination of the mouth showed a condition commonly known as ranula. The writer having witnessed a similar condition only a short time before, quickly performed the simple operation necessary, aspirated and drained the cyst, and thus afforded the infant immediate relief.

The first case did not prove so serious or urgent; in fact, nothing of a surgical nature was necessary, until the mother found that the baby was unable to take the breast. The second case undoubtedly also would have had trouble in nursing.

Case No. 1 was attended to by the hospital staff-surgeon, who pronounced the condition a retention-cyst. It is interesting to note that, while all the material was drained out at the first operation, it was necessary to repuncture the sac, since it readily filled up again and so caused the same obstruction as before. However, after the baby was about ten days old the whole condition disappeared.

Case No. 2 was entirely under my own observation. In this case, the cyst was found to extend to the posterior surface of the tongue and slightly adherent to the base of the mouth. The procedure of relieving the condition was the same as described in Case No. 1.

The writer subsequently has taken the trouble to review the literature on this subject, but has discovered, to his great dissatisfaction, that there is little, if anything, in particular said on this subject. Ranula is quite exhaustively discussed, but there are only a few cases which appear to be in any way similar to the one described here. The literature tells us that, as a general statement, it may be taken that retention-cysts of the mucous glands may occur in any part of the mucous coat of the alimentary tract. Some reports cite instances in which small cysts embedded in the muscle of the tongue have occasionally been found.

These cysts are the result of some obstruction of the ducts of the salivary glands, which, owing to the obstruction, become cystically dilated. If the tumor presents itself in the floor of the mouth, beneath the tongue, it is given the name of ranula, while, if it takes its position on the anterior surface of the tongue and without pressing in any way on the floor, it is usually of the retention-

type of cysts. Not infrequently dermoids and other varieties of cysts are mistaken for retention-cysts of the tongue, but these two must be carefully differentiated.

ABRAHAM R. HOLLANDER,
Chicago, Ill.

STRAIGHTENING OUT ANOTHER HARRISON-LAW TANGLE

We have been informed that the United States Commissioner of Internal Revenue has ruled that the practice of renewing narcotic prescriptions by indicating thereon the druggist's serial number will no longer be permitted, such a practice being inconsistent with the ruling given in Treasury Decision 2213. It is stated that this practice was never allowed by the Department for the renewal of prescriptions for narcotic drugs alone, but it was permitted for a time in some instances, when physicians had forgotten the exact proportion of ingredients of a preparation or remedy containing narcotic drugs and desired to renew the prescription therefor.

It is well to remember that at all times the name and address of the patient, the date, the name of the ingredients and the respective quantities, the full name and address of the physician as well as his registry number, must appear on each and every prescription calling for narcotic drugs, preparations or remedies coming within the scope of the Harrison Narcotic Act.

STATE BOARD EXAMINATION QUESTIONS

We are constantly receiving letters from physicians who wish us to publish some of the state board questions used in the various states in the examinations for medical licensure, together with answers, and comments on the licensing laws, reciprocity, and the like. Accordingly, we have decided to give a small amount of space to this subject—for a few months at least. Whether this feature will be continued or not will depend upon how our readers like it. Please let us know if you approve or if you think it a waste of space. CLINICAL MEDICINE tries to do the greatest good to the greatest number of its readers.

The questions given this month were those used at the California examination of June 17 1915. Only half the topics are covered this month. The balance will be printed in February, together with answers to the questions printed in this issue.

ANATOMY AND HISTOLOGY

1. Give formation and branches of the lumbar and sacral plexuses. (May use diagram.)
 2. (a) Classify articulations; give a typical example of each class.
(b) Discuss the hip joint, naming all muscles passing across the joint.
 3. Discuss the distribution and central connections of the auditory (8th cranial) nerve.
 4. Discuss the bony thorax.
 5. Discuss the pleura, giving attachments and reflections, also external markings of its boundaries.
 6. (a) Give the action of the sterno-clido-mastoid; singly and together.
(b) Give the action of the psoas magnus.
(c) Serratus anterior. (Give action of)
(d) Deltoid. (Give action of)
(e) Trapezius. (Give action of)
(f) Ilio-costalis. (Give action of)
(g) Latisimus dorsi. (Give action of)
 7. (a) Describe by diagram, the longitudinal section of the femur, showing outline and histological structure, showing normal development and regeneration.
 8. Give the essential differences of the appearance and structure—gross and microscopic—of the mucous membrane of the duodenum, jejunum and ileum.
 9. Give the histology of a medium size artery.
 10. Give formation of the tributaries of the portal vein; give most inferior tributary.
 11. Discuss the cervical sympathetic ganglia; give location, tributaries, and branches.
 12. Give histology of the mammary gland; make drawing showing typical histological section.
- Answer ten questions only.*

PHYSIOLOGY

1. (a) Discuss haemolysis.
(b) Discuss the origin and fate of the leucocytes.
 2. What is the relation of the nerves to the movements of the intestines?
 3. Discuss the influence of the nervous system upon respiration.
 4. Define the following terms: Inhibition, diffusion, osmosis, diapadesis, perimetry.
 5. Discuss the metabolism of the embryo.
 6. Discuss color blindness.
 7. Discuss inhibition in reflex action.
 8. Discuss the relation of the rods and cones to vision.
 9. Discuss the variations in the volume of the brain due to respiration.
 10. Discuss the sensation of hunger and thirst.
 11. (a) What are the sources of uric acid?
(b) Where and how is uric acid formed?
 12. What effects are observed after section of a cutaneous nerve?
- Answer ten questions only.*

CHEMISTRY AND TOXICOLOGY

1. Name and give the formulae for five salts of mercury.
2. What is the formula of hydrogen peroxide? What is its action upon silver oxide; upon finely divided platinum?

3. What is "bleaching powder", its formula? How does it act as a disinfectant?
 4. Define and discuss diffusion and osmosis.
 5. Describe and discuss briefly HNO_3 ; its chemical and physical properties.
 6. Discuss arsenic (its occurrence, properties, toxic effects) and describe the use of one antidote.
 7. Discuss lead poisoning and two effective means of overcoming the same.
 8. Define "physiological antidote" and "chemical antidote" and give an example of each.
 9. Discuss hydargyrism.
 10. Discuss the indications and contraindications for the use of stomach pump.
 11. Discuss carbolic acid poisoning and an efficient method of treatment.
 12. Discuss the toxic effects of yellow phosphorus.
- Answer ten questions only.*

BACTERIOLOGY AND PATHOLOGY

1. What changes are found in a stained blood smear in primary pernicious anemia?
 2. What elements might you find microscopically in the sediment of a normal urine?
 3. Describe the microscopic field seen in: (a) a negative Widal reaction; (b) a positive Widal reaction.
 4. What do you look for in a microscopic examination of stomach contents?
 5. Define eosinophilia; name several conditions.
 6. What are casts? Describe at least three varieties and tell under what diseased conditions they are found.
 7. Discuss briefly the etiology of chronic interstitial hepatitis, or cirrhosis of the liver, and describe the microscopic appearance of at least two varieties.
 8. Describe embolism, infarction and thrombosis and briefly discuss the pathology of each.
 9. Define: (a) carcinoma; (b) sarcoma. Give the relative frequency of occurrence in (a) breast; (b) liver; (c) bone.
 10. Describe the gross appearance of a bone at the site of osteomyelitis.
 11. What are the causes of jaundice and how do they operate to produce this condition?
 12. Define: (a) cloudy swelling; (b) atrophy; (c) malignancy.
- Answer ten questions only.*

MATERIA MEDICA AND THERAPEUTICS, PHARMACOLOGY, INCLUDING PRESCRIPTION WRITING

1. Name four commonly used mercury compounds (U. S. P.) and discuss briefly their therapeutic uses.
2. Discuss fully the possible therapeutic effects that would be expected of the following prescription:
Rx
Tinct. nucis vomice..... 5,0
Fluid extract cascara..... 10,0
Tinct. cardamom comp..... 25,0
Tinct. gentian comp. q.s.ad.100,0
M.Sig. Take one teaspoonful in half glass of water t.i.d., before meals.
3. What is apomorphine? State dosage, indications, modes of administration and action.

4. Discuss the indications and contraindications for the use of the following:
Rx
Kalii iodidi..... 18,0
Aqua dest..... 60,0
Syrup sarsaparilla comp.
q.s.ad..... 125,0
M.sig. Take one teaspoonful, well diluted, t.i.d. p.c.
 5. Describe and discuss three different modes of administering drugs for therapeutic purposes.
 6. Discuss the conditions that modify the effects of drugs.
 7. (a) Discuss the dosage of drugs as influenced by age, sex, size and weight of the individual.
(b) Define idiosyncrasy and discuss one example.
 8. (a) Discuss oleum ricini, its dosage, therapeutic action and indications.
(b) Discuss three contraindications for the use of intestinal evacuants.
 9. Discuss the systemic action of alcohol (internally administered).
 10. What is adrenalin? How is it administered? What are its principal effects?
 11. Discuss salvarsan (its principal properties, dosage, best mode of administration, indications and contraindications).
 12. Describe the bromide salt most commonly used (as to its physical properties, dosage, therapeutic action and untoward effects).
- Answer ten questions only.*

KEROSENE ENEMAS, AND THE RECTAL TUBE

It is now some twenty years since I inserted the full-length of a 2-foot soft-rubber rectal tube, to dislodge an obstruction at the ileocecal valve. About 2 quarts of kerosene was injected, and the difficulty was soon removed. I have repeated this in the case of other patients since then.

To succeed in this operation, it is necessary to keep the tube and bowels constantly inflated with warm water while inserting the same. The tube must be of good soft rubber, with thick walls, and at least 1-2 inch in diameter. A soft, over-flexible tube will double upon itself when making the turns in the large bowel.

V. E. LAWRENCE.

Ottawa, Kans.

AMEBIC DYSENTERY TREATED WITH EMETINE

An interesting case of amebic dysentery was recently referred to me by a brother physician. The patient was a woman, and when I first saw her, on September 24, she had been ill for four weeks. She had a very weak pulse, averaging 120; the temperature ranged from 101° to 103° F. She was pass-

ing at that time from twelve to fifteen stools in twenty-four hours, the discharges containing much blood. Although I do not have a complete laboratory at my disposal, I nevertheless was able, with my microscope, to detect the ameba in the fecal matter; thereby proving the correctness of the diagnosis made by the other physician, Doctor Hubbard, of Indiana. Almost everything was tried that might be useful in amebic dysentery, but with poor results. We then decided to give emetine a trial. We began with three 1-2 grain ampules in the twenty-four hours. This treatment was continued for twelve days. By this time, the number of stools was reduced to four daily. Thereafter the patient was given one 1-2-grain ampule of emetine daily for fifteen days.

In this case, the emetine certainly did the work. However, other treatment was employed, which undoubtedly contributed to this woman's cure.

R. E. LEE.

Oxford, Ind.

THE TREATMENT OF SUPPURATIVE OTITIS MEDIA

The failures recorded in the treatment of suppurative otitis media are so familiar to the aurist that comment is unnecessary. Following along lines indicated by the best authorities, I have had a modicum of success, but it is to the failures that I will direct my attention. After all that has been said on the subject, I have chosen to place before my confrères the result of my recent work in effecting cures in those cases which usually baffle our best efforts. A brief summary of the few cases I have selected at random will, I think, bring to mind conditions with which we are familiar.

In the clinics of hospitals and in private practice, I have looked with despair upon such cases, and because of my utter helplessness I determined to find some measure that would at least inspire hope.

In the course of my patient work in this direction, I have evolved an antiseptic solution that has given me most gratifying results, and I take pleasure in submitting herewith the formula of the same, as follows:

| | |
|----------------------------|-----------------|
| Acetanilid..... | grs. 32 |
| Resorcin..... | dr. 1 |
| Boric acid..... | drs. 2, grs. 24 |
| Formalin..... | m. 20 |
| Alcohol..... | ozs. 2, drs. 3 |
| Water, enough to make..... | ozs. 16 |

Ten months ago, a colleague referred to me, for an opinion, a case of chronic suppurative

otitis media. The patient, a young woman, age 19, in perfect health, complained of a discharging ear since her early childhood. On June 8, 1911, a radical operation upon the mastoid bone had been performed, and on September 28, of the same year, she was again operated upon for the removal of necrosed bone. The operations evidently had been done with perfect skill, but the ear continued to suppurate.

In giving my opinion, I suggested the use of an autogenous vaccine, which advice was followed; and a series of fifteen injections, at regular intervals, were given. However, no improvement followed. During that period, I wish to mention, proper local treatment was not overlooked. Thinking that, possibly, the vaccine was at fault, I had another vaccine made; still, after repeated injections of this, the condition remained unchanged. It was at this period that I began treatment with the solution described, with the result that in four weeks the cure was complete.

My success in this case was such a revelation to me that it inspired me with the greatest confidence.

The following cases, I think, are just as interesting, and I will report them briefly:

Mrs. M. R., age 21, had a discharging ear since childhood. Radical mastoid operation was performed in November of 1913, without relief. Vaccines and local treatment availed little. July 16, 1915, treatment with the above solution was instituted. On July 27, her ear was absolutely dry. Discharged cured, and cure holds good at this writing.

L. V. C., age 15, had a suppurating ear for ten years. Was treated by several specialists. December 22, 1913, radical mastoid operation was performed. Six months later, curettement of eustachian tube was done. The suppuration continued. Then fifteen injections of an autogenous vaccine were given. No results. July 29, 1915, I began treatment with the solution, and by August 13, 1915, the ear was dry. The patient stated that this was the first time his ear had been dry. This case is still under observation.

Mr. A. W., age 38 years, had discharging ear since 1895. Consulted a specialist in the city in 1912, who did a radical mastoid operation. The patient remained for treatment and was discharged as cured at the end of two months. The ear continued dry for about eight months, then began to discharge again. In 1913, the patient returned for treatment, remained only a short while, and left without benefit. In 1914, he again returned, and was treated without benefit. In

July, 1915, he again returned, and this time was treated with the solution. After two weeks' treatment the ear was dry. At this writing, the patient's ear still is free from secretion.

D. L., age 12 years, had a suppurating ear since he was one month old. July, 1914, he had a radical mastoid operation. The ear continued to suppurate. Vaccines and local treatment were of no avail. He left for home, but returned in July, 1915, for further treatment. July 20, 1915, I began treatment with the solution, and after three applications signs of improvement showed. At this writing the ear is practically free from secretion.

Mr. R. A. J., age 26 years, had chronic suppurative otitis media for the past three years. The discharge ceased after the second treatment, and the ear remains dry now one month after that.

A. W., age 4 years. The mother said that something burst in the ear on Saturday night, and they came for treatment on Monday morning, the ear discharging. The solution was used, and the cure was complete after the second application.

N. C., age 2 years. July 12, 1915, had double tympanotomy. July 13, 1915, there was mastoid tenderness. The usual treatments gave no relief. July 17, 1915, all other treatment was discontinued and the solution was used for the first time. July 20, 1915, the ear was free from secretion.

N. S., age 12 years, had a discharging ear of three weeks' duration. Had no pain at any time. July 28, 1915, the solution was applied. The discharge ceased after the second application, and has not returned.

My method of treatment is as follows: The ear should be gently and thoroughly mopped out, then, after all evidence of secretion has been removed, introduce a tampon, saturated with the solution, as far down in the fundus as possible, using very little force. If the secretion is profuse, this procedure should be repeated daily. As the discharge lessens, the treatment should be given on alternate days or longer periods, at the discretion of the doctor.

A few pertinent observations may not be out of place. The surgeon must exercise great care in removing any exciting cause located in the nose or nasopharynx; the presence of necrotic bone must be determined and special directions given as to the general health of the patient.

In acute conditions, where mastoid involvement is suspected, I would advise repeated instillations, rather than tampons, during this stage.

What has appealed to me most strongly is, the results obtained in those cases where the radical operation upon the mastoid bone has been performed in suppurative otitis.

New Orleans, La.

JOHN S. DUNN.

CLINICAL NOTES FROM IDAHO. TYPHOID FEVER AND THE CONTAGIOUS DISEASES

These are jottings of clinical experience in the early fall and winter in the beautiful climate of Idaho, at an altitude of over a mile. This season has been extremely dry, no rain falling for three months, and the dust has been very objectionable. Whether the dusty summer will predispose to greater prevalence of throat and lung diseases is pure conjecture at this time, for the weather, while frosty at night, is warm and bright during the day. There have been few cases of "summer complaint," although the flies have been bad, and no cases of typhoid fever.

Last fall, there was a good deal of wet and stormy weather and an increase of rheumatic and bronchial troubles. And only one case of typhoid-fever. This was in a girl of fourteen who had been too ill to go to school, but was up and around for ten days before receiving medical attention. Two days later, the hemorrhage occurred. Ice and absolute rest for twenty-four hours, with a hypodermic of emetine hydrochloride, 1-2 grain, repeated in twelve hours, was all that was necessary to control this. The patient was free of fever in twelve days, but convalesced rather slowly. Intestinal antiseptics (the sulfocarbolates) were, of course, given throughout the attack in 5-to 10-grain doses every two hours, to reduce fetor of the stools and control tympany.

There have been few other cases of communicable diseases, and these were so mild as to need little treatment. Measles, pertussis, and smallpox rarely receive medical treatment. During the winter, there was little pneumonia, but the wet months of April and May brought more than their share. The sthenic cases are treated with the defervescent granule, given frequently until defervescence, with thorough elimination, is secured. In the early stages of the disease no food is allowed, but water is ordered in quantity. Calomel is given in divided doses followed by saline laxative, and, in a few hours, by a large dose (three or four tablespoonfuls) of castor-oil. I have seen cases that were showing very grave symptoms—temperature 104, pulse, 120, severe

pain in the right chest, with constant hacking cough, rusty sputum, restlessness—so improved by thorough elimination as to make one question the diagnosis.

Then there are cases that do not improve even with the most thorough elimination, demanding constant energetic attention to bring them through the crisis.

I believe in fresh air, but there is no necessity for freezing the patient. I believe in rest, but not to the detriment of the patient. Do not disturb so frequently as to interfere with rest, especially at night. Toxemia kills—eliminate even in the seemingly moribund. Do not overstimulate—but stimulate without fear when stimulation is demanded. If digestion is poor, if tympany develops, if fetor of the stool is present, restrict diet, eliminate, give intestinal antiseptics freely.

Since the great development of the field of action of emetine, and its specific influence in amebic disorders, this alkaloid has become the best-known of all our plant-remedies, and its use is being advocated in disorders that at first sight seem hardly related. Deep consideration of the fact of focal infections, arising anywhere in the body, and their often puzzling obscurity, has drawn attention to their possible cause in mouth and throat diseases; and in these cases it has been found that injections of emetine hydrochloride are beneficial and, in time, curative.

One inevitably, nowadays, in discussing pyorrhea alveolaris, thinks of emetine and its wonderful specific action in controlling this disease. I have seen this specificity in several bad cases of late, and it is really remarkable what excellent results are obtained. In cases of pyorrhea, it is absolutely necessary to have the earnest cooperation of a good dentist, and he must eradicate the local disease first, before any treatment will be successful.

I have used emetine in hemorrhages and find it almost specific here. In metrorrhagia, menorrhagia, pulmonary hemorrhage, intestinal hemorrhage, epistaxis, it has been of evident benefit.

I am using it in a case of psoriasis in a boy of twelve, affecting the arms and legs, and some improvement is already noticed. In a case of gall-bladder trouble, doubtless due to mouth infection, and in another owing to chronic tonsillitis, a few hypodermic injections of emetine, in conjunction with local treatment, have, seemingly, put an end to the attacks.

I cannot get away from the necessity of reiterating the importance of elimination. It

seems strange that all the literature on this subject has produced so little real impression upon the rank and file, and we still, and all too often, meet with cases where this essential in all treatment has been wofully neglected. To give a few tablets of calomel, followed by a saline laxative, is routine treatment with a great many, and these think that elimination has been attained. Their other treatment is all right, but results are not as expected, and remedies are blamed, when the blame should be placed upon the *lack of thorough elimination*. Here one often sees remarkable results follow a large dose of, say, castor-oil.

I am partial to castor-oil. I think it is *the* remedy in many diseases of childhood, and in those of adults also. It is an old remedy, some three thousands of years old, and, so, if age counts, it ought to be beneficial. Its cleansing effect is wonderful.

All this, because of a case lately treated. Elimination was demanded, in view of the foul breath and the coated tongue, the fetor of the stools, the inappetence and poor digestion, and, yet, all kinds of remedies had been given to alleviate the distress of the patient, without attending to the prominent symptoms present, and all these calling for—yes, 4 tablespoonfuls of castor-oil or else a sufficient quantity of a saline laxative.

After elimination, the purified cells of the body will be able to select the right remedy, to correct the deviation from health.

In this connection, I would call attention to the beautiful results obtained from the use of bilein compounds, such as calomel, podophyllin, and bilein compound preliminary to the routine use of your chosen laxative.

Two brothers and their sister have died from "leakage of the heart." The last member of the family, a man of forty-four, has developed endocarditis, with involvement of the mitral valves. Rest and elimination, with macroys and cactus, and attention to the digestion, constitute the treatment.

I have under treatment for typhoid-fever, a little patient, a sister of my one case last fall. Following a suggestion in *Clinical Medicine*, I am trying emetine hypodermically, and shall report results.

R. J. SMITH,

Bancroft, Idaho.

FREEMAN'S PELLAGRA CASE: A CORRECTION

I have a correction to make concerning the case of pellagra reported by me last month. At that time, I stated that I had not seen

the patient for three weeks, but that the neighbors told me the child was doing well, that its skin was clearing up, and everything was improving.

Some two weeks later, the mother again brought the child (3 years old) to me, giving as an excuse for the long absence that she had been away from home. The child's condition was worse again. The lower part of its face was quite clear, but the upper face—especially the forehead and back of the ears—the arms, hands, knees, and feet were much worse; and the child was more stupid, as if its brain were affected. I now gave echinacea, calcium sulphide, galactenzyme, nuclein, and other tonics, as seemed needed, but there was no real improvement. The people are very poor and negligent, the medicines (as I discovered) were not given half the time, suitable food could not be obtained, and November 20 the child died. Neighbors say the child was born out of wedlock, which, perhaps, accounts for the neglect.

However, the statement concerning the improvement after the new treatment with iodine and resorcin, as I reported, is testified to by those who saw the sick child at that time.

C. A. FREEMAN.

Geary, Okla.

THE SHORTAGE OF DRUGS

We have received from Dr. L. F. Schmauss, of Alexandria, Indiana, a copy of some resolutions, concerning the present shortage in various drugs, adopted at the annual meeting of the Indiana Eighth District Medical Society, held in Muncie, Indiana, October 21, 1915. Dr. Fred McK. Ruby is president of the Society and Dr. H. D. Fair is the secretary. It is just as Doctor Schmauss states in this letter, relative to this drug shortage:

"Since there is no excuse, no justification for the prevailing interference with our legitimate trade or commerce, with the importation of drugs and chemicals, prompt action should be urged upon and taken by every medical society or association of the United States. This is not a matter of partisanship nor a matter of pro-Ally or pro-German, but a matter of pure business and of exerting our rights and of performing our duty as the party or profession directly concerned."

The resolutions are as follows:

"Whereas, owing to the present condition, there is an inability to import drugs and chemicals necessary in the treatment of the sick and injured, by reason of which the

price has so advanced that in many instances it becomes prohibitive and in others absolutely impossible to obtain them, and

"Whereas, this condition imposes a great hardship upon physicians and patients and in many instances endangers the life and health of the people,

"Therefore, we exceedingly deplore this condition and pray that you will use your best efforts speedily to relieve the same.

The Committee: DR. L. F. SCHMAUSS,
DR. I. N. TRENT, DR. G. REYNARD."

SORE-THROAT SUGGESTIONS

All sore throats are caused by microorganisms except those due to trauma, and these at once become infected by the same parasites.

Any form of sore throat opens the door to the invasion of diphtheria; and no man may tell when these germs are not present, in carrier or house.

Make it a rule that every sore throat must be treated from the standpoint of preventing the supervention of diphtheria.

Fortunately an effective preventive of diphtheria is also a quick, sure and harmless cure for any sore throat. Here it is: Potassium chlorate pulv., grs. 30; acid hydrochloric, strong, dram 1. Mix in a 4-ounce vial and add at once water to fill; cork tightly. Dose, a teaspoonful, undiluted, every one to four hours. Give water just before each dose. As long as the green color shows free chlorine it is active; when this fades, throw away and renew.

In cases needing astringency and in early diphtheria add two drams tr. ferri chloridi to the 4-ounce mixture just described. Same dose, same method of dosing. While this is a disagreeable dose, it so quickly relieves the burning that a little child will beg for more doses.

The angina of scarlatina responds promptly to applications of salicylic acid solution, until true diphtheria complicates; when it is useless.

All forms are bettered by relieving from fecal toxemia, which renders the best local treatment nugatory in chronic forms.

Begin by clearing the bowels and draining the water off; calomel and podophyllotoxin for six doses; then a saline laxative; and meanwhile your local applications.

Our fathers believed (a) that calome' acted on the liver; (b) that it did the patient good. In the vast majority of cases the latter belief was correct. You may argue the first.

Aconitine dissipates an acuté pharyngitis by opening the blood vessels and letting the blood flow out and decongest the affected tract.

Atropine dissipates an acute catarrh by dilating the capillaries generally and pulling the blood out of the engorged area.

Pilocarpine dissipates an acute mucous engorgement by draining the blood of water so that the congesting fluids run out into the vessels.

All stimulants of excretions act like pilocarpine, but few if any so thoroughly and so quickly; still, hydragogs are effective.

Potassium bichromate in very small, frequent doses has a singular soothing effect on an inflamed throat; let the granule dissolve on the tongue.

Calcidin in small doses every fifteen minutes, in a spoonful of very hot water, usually dissipates an acute sore throat if taken early enough.

A cold wet compress to the neck is believed by many to be quite effective and may be applied to any acute form of sore throat; ice in diphtheria.

The slightest sign of coryza in diphtheria is ominous; begin syringing the nostrils with silver nitrate at once; changing to chromic acid if epistaxis occurs.

In chronic forms, with red thickenings of mucosa, paint daily with iodine, keep bowels clear, and give potassium bichromate or calcidin regularly.

Many remedies abort a forming tonsillitis if given early enough.—salicylates, quinsy balls, guaiac, chlorine, quinine, pilocarpine, purges.

Calx sulphurata (calcium sulphide) is probably the most effective of all—give a centigram every fifteen minutes till the skin smells like—? ? ?

Nuclein solution 's a curious remedy here; amazingly effective if taken early and in full doses of full strength.

The irritative cough is relieved by allowing granules of codeine, 1-6 grain each, to dissolve on the tongue, meanwhile restraining cough by will.

In influenzal forms forget your dosage and give enough calcidin to do the work; it will do it; give 5 to 10 or 20 grains often.

Just to be up to date, I suggest that in all sore throats you amputate the affected parts as quickly as possible.

Chronic forms require chronic treatment; and here is where helenin, the tonic action of berberine, and especially persistent care of the bowels give good results to him who has knowledge and patience.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR
Conducted by GEORGE F. BUTLER, A. M., M. D.

[Continued from December issue, page 1165.]

DOCTOR CABOT'S address, "A Profession or a Trade?" delivered at the last meeting of the Mississippi Valley Medical Association, to which I referred last month, was as follows:

Medicine has always been regarded as one of the learned professions, and, indeed, this is a distinction of which we are particularly proud. But the tendency of a profession to degenerate into a trade is ever present and is a danger from which more than one learned profession has been unable to escape. If medicine is to avoid the downfall which has overtaken the law, it will be because we are more conscious of the dangers or more alert to check at the beginning undesirable developments. It is for this reason that I make no apology for calling to your attention some tendencies in the development of modern medicine which seem to me fraught with danger.

At the outset of any discussion of the professional or trade aspects of medicine, we shall do well to define our terms.

To me, a profession is an occupation requiring an education in science and which is pursued for its own sake. It must have the advancement of science or the benefit of mankind as its chief end, pecuniary advantage being always a secondary and subordinate consideration.

A trade, on the other hand, is an occupation which is pursued chiefly, though not wholly, for the purpose of acquiring wealth; this wealth, with its ability to advance the interests of the individual, being the chief end.

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In estimating the importance of any development in medicine, we can best do so by comparing present conditions with those of the past. The changes which have taken place and the effect which they have produced upon the prevailing type of practitioner stand out clearly, if we look back and picture to ourselves the type which was

looked upon as the highest twenty years ago and compare it with the best that we are producing today.

The "big men" of twenty years ago had, without exception, gone through the school of general practice and had risen from the ranks to eminence by sheer force of character; being largely without assistance of the laboratory, and having fewer instruments of precision than we possess. They had trained their faculties of observation in the hard school of experience and had come to rely far more than we do today upon their individual judgment, unsupported by clearly demonstrable fact. They were more astute judges of men, with a larger comprehension of the strength and weakness of human nature, and a wide sympathy. They were characterized by a certain boldness less seen today, and bred of the necessity of staking their reputations upon much less certain evidence. They seem to have been broader-minded and rather more in touch with affairs other than those of medicine. Their devotion to the ideals of medicine I believe to have been more profound. Upon this latter point we have the direct testimony of a great surgeon in a lecture delivered nineteen years ago this month. Among other things he said:

"Medicine is the noblest of professions and the saddest of trades. As a trade, it certainly is a very sad calling. . . . In all other ordinary business trades, the young man who is entering upon them advertises himself in some way; the doctor may not advertise. . . . He can not sue others very well for his debts . . . because that savors of oppression. It is the taking advantage of other people's misfortune; it is taking advantage of their sickness and their weakness. . . . The doctor, you must bear in mind, has to carry the burdens of all sick people; he is their friend, adviser and counselor, and if you look at it from a plain business point of view the fact must remain that this must be counted as a somewhat discouraging feature. . . . Ours is the noblest profession

that exists. It is above all the most humane; it can not be otherwise; we seek daily and give our lives to make people happier, to make them better, to alleviate their suffering in every possible way."—(Cheever, *Boston Medical and Surgical Journal*, December 17 and 24, 1896.)

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This fairly expresses the ideals of the best type of practitioner developed under the conditions which existed a generation ago, conditions which developed character, which involved the ability to judge men, to make sound deductions from a study of character and to come to a decision and act upon it as the result of weighing probabilities, not facts.

Since that time, enormous advance has been made in every field of science as related to medicine. What we may broadly call "the laboratory" covering the fields of chemistry, bacteriology, pathology, and physics, has broadened the scope and increased the accuracy of medical diagnosis. Instead of being required to weigh probabilities, we are today able to assort facts. Judgments of character have given place to assortments of data, and, whereas the practitioner of a generation ago was profoundly influenced in his decisions by his study of the individual, the consultant of today may almost arrive at his opinion without ever seeing the patient. The amount of technical knowledge required of the physician today is enormously greater than was required of his predecessor, and it can not successfully be denied that he is far more likely to arrive at a just appreciation of the facts.

With this advance, however, has gone the necessary division of medicine into specialties, a division which the rapid accumulation of knowledge has rendered inevitable; and this has sounded the death-knell of the general practitioner. His place has been taken, or, rather, is occupied, by the medical group, an aggregation or conglomeration of specialists who, having pooled the results of their investigations, are able with greater accuracy to come to a diagnosis. These groups have developed either around the hospital as a center or around some individual who, finding that medicine was growing away from him, has surrounded himself with assistants and associates equipped with special knowledge.

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In its most finished form, the medical group is represented by a hospital, with medical and surgical chiefs, chiefs of special departments, and under each the necessary subordinates;

but this development has been reached only by a comparatively small number. In a less obvious form, however, the principle is very widespread. Almost every internist or surgeon of large practice is, in fact, the head of a group, only it is unorganized and unnecessarily expensive. Each has an aurist, an oculist, an orthopedist, a dentist, a roentgenologist, a chemist, a pathologist, a serologist, who examine his patients and on whose collective opinions his own diagnosis, prognosis, and treatment must rest. Each one of us is a part of some more or less informal group, though the cohesion may be so loose as to more or less obscure the fact. This tendency to grouping is becoming more marked and the groups more formal.

There can be no question as to the efficiency of this method of "group medicine" in arriving at an accurate diagnosis, and there can, I think, be no question of the necessity of such grouping in the successful development of scientific medicine. We may, and do, regret the disappearance of the well-rounded general practitioner, but we must acknowledge the limitations of the human mind and, so, bid him an affectionate farewell. We shall, however, do well to remember that this development carries with it certain serious disadvantages, the effect of which upon the type of practitioner developed may well be profound.

"Group medicine" means diminished personal relation with the patient, less comprehension of character and personality, increasing probability of impersonality in the relation; in a word, the group tends to become a machine. Should this occur, the individual becomes a cog. Furthermore, the development of group medicine, with the increasing subdivision of medicine, has enormously increased its expensiveness. Such groups require vastly more income than did the general practitioner whose place they have taken. It is this increase in the expense of medical practice which has fostered the growth of scandalous advertising, fee-splitting and the general exploitation of patients for money.

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These are but the evidences of the development of the trade-aspect of medicine, since all of them not only are proper, but necessary in the conduct of any well-organized business. Business ethics require the giving of commissions to those who send trade. Business development requires advertising; business judgment requires that discovery be developed for the benefit of the discoverer.

The increasing impersonality of group medicine makes the acquisition of the business point of view more easy. With the loss of the personal relation, the impropriety of taking advantage of the misfortunes of others slips into the background, while the necessity for maintained income from which to pay salaries becomes increasingly evident. A group must almost of necessity be managed upon a business basis. Salaries, if agreed upon, must be paid, and, whereas the practitioner of former times had to think only of himself and of his family, the responsible head of a group must think of all the subordinate members of that group.

If it be a fact that most medical groups which have reached prominence in this country have been built up by advertising and fee-splitting, it is not so much a wonder that this has occurred as that it has not been absolutely universal. In the transition between individual medicine and group medicine, this problem of income has pressed for solution and has been solved most easily by the adoption of business methods which require advertising and commissions.

We shall do well to look these facts squarely in the face and to decide as promptly as may be whether this development of group medicine is the logical method and, if such be the case, to lend it, not only our support, but our criticism. It must be perfectly evident that the individual who undertakes to combine in his own person all the functions of the members of such a group will inevitably fail, and that the replacement of the general practitioner is already complete for such portions of the country as are thickly populated. We shall do well also to recognize that this development seriously threatens the professional character of medicine and that, unless it be carefully safeguarded, the professional character will be lost.

For my own part, I am entirely convinced that the group must take the place of the individual.

We shall doubtless be tempted to ask whether such a system of medicine tends to develop men of a caliber equal to their forefathers; and whether this business organization tends to develop as high a type of practitioner. The answer to these questions is, of course, difficult, for, certainly, it will tend to develop an entirely different type.

More and more the heads of these groups will become experts like any other business experts and likely to hold a similar position in the community. The "big men" in med-

icine will be more like the big men in business. They will cease to be the guide, counselor and friend of the individual, but may perhaps become the guide, counselor, and friend of the community. Their present position in the community will probably be lost, but they may acquire another, perhaps better suited to modern conditions. Since the development of medicine has made it impossible for them to do justice to their patients without much assistance from others, they must be content with the altered relation; but this change does not require the abandonment of the ideals of a profession and the assumption of the character of a trade. It is wise, however, to appreciate that the scale is narrowly balanced and may readily tip in such a way as to spill its contents from a profession into a trade. If this is to be avoided it must be by a willingness to face the facts and deal with them.

The chief difficulty lies in providing a proper income for the support of these medical groups. At the moment it is being provided by a competition that has many dangerous possibilities. Competition is the essence of growth, but competition may be of more than one kind. Competition in a trade is, grossly speaking, for a money reward; competition in a profession is for scientific achievement. If competition in medicine is to be both for money and scientific achievement, then money may well gain the upper hand. Competition between medical men for money when lives are in the balance is intolerable, and, yet, no one of us can honestly deny that such competition today exists and that it is at the root of most of the worst tendencies against which we have to strive. If medicine is to remain a profession, this competition for money must cease.

Now, if we are to remove from the field of medicine this undesirable kind of competition, then all practitioners of medicine must be paid salaries and the amounts of these salaries must be determined by persons having no personal interest at stake. This means, reduced to its simplest terms, that we have a choice between the taking over of medical practice by the state or the management of medical practice from institutions or hospitals as a center. In either case, salaries must be paid to all, and the temptation to practice medicine for money must be eliminated as a possibility. The choice between state-medicine and hospital-medicine must be determined ultimately by the peculiarities of the civilization concerned.

(To be continued.)

Among the Books

TREAT'S "INTERNATIONAL MEDICAL ANNUAL"

The International Medical Annual. A Year-Book of Treatment and Practitioner's Index. Thirty third Year. New York: E. B. Treat & Co. 1915. Price \$4.00.

If Messrs. Treat and Company existed for no other purpose than to furnish us each year with this excellent summary of the twelve months' achievement and progress in medical science, they would fulfill a function which would amply justify their corporate existence. Of course, it does not tell the whole story of research and experiment—no volume could do that. But it serves out the net practical sublimation of the year's work, cast into ammunition (to use the figure of speech of the day) ready for use by the man at the front.

We are glad to see a larger and larger sprinkling of American sources throughout the book—a feature, by the way, which is not indicated by the list of "contributors" on the title page, who are mostly English. One finds, however, that much of their contributions is derived from American authors and workers. The more modern forms of therapy also find a very generous representation in this volume.

AARON: "DIGESTIVE DISEASES"

Diseases of the Digestive Organs. With Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D. With 154 engravings, 48 roentgenograms, and 8 colored plates. Philadelphia and London: Lea and Febiger. 1915. Price \$6.00.

The plan of this work follows the physiologic path of the digestive tract, beginning with diseases of the mouth, and taking up, in succession, the pharynx, esophagus, stomach, liver, gall-bladder, bile ducts, pancreas, small intestine, appendix, cecum, colon, sigmoid flexure, rectum, and anus.

The author has attempted to put before the reader, in an orderly, consecutive manner, the diagnosis and treatment of digestive diseases and to make available to him all the modern resources of this branch of medicine.

There is an unfortunate tendency nowadays to isolate the consideration of diseases of the digestive organs from the great body of internal medicine, in spite of the fact that a direct connection exists between the functions of the digestive tract and those of other organs.

In this work the author reaffirms the intimate relationships between gastroenterology and all branches of internal medicine. No subject has profited more by modern research than has the diagnosis and treatment of diseases of the digestive organs; and all of this progress and advance finds a representation in the pages of Doctor Aaron's excellent work.

WOODRUFF: "MEDICAL ETHNOLOGY"

Medical Ethnology. By Charles E. Woodruff, A. M., M. D. New York: the Rebman Company, 1915. Price \$2.00.

The author states that the present work was begun as a revision of the first edition of "The Effects of Tropical Light on White Men," but that he found it necessary to change the title to "Medical Ethnology" because he found himself obliged to reckon with so many other factors besides pigmentation which have entered into the discussion of the reasons for the differences between the present races and sub-races of men—for example, the damage to migrants by adverse environmental conditions against which they have no physical defenses.

Woodruff accepts as an axiom the proposition that all the laws which govern the evolution of adaptation of lower animals to environment by elimination of the unfit and selection of the fittest, apply with equal force to men, which, he thinks, fully explains the high death rate of migrants and their eventual extinction or change of type. He appears to us, however, to fall into the common error of assuming that the acceptance of this axiom involves a blind enslavement to it.

While it is doubtless true that all the laws which apply to animals in this respect apply also to men, it may be, and probably is, equally true that there are other laws which apply to men which do not apply to ani-

mals. It seems to us that the author does not give enough consideration to these other laws and factors. Except for this defect, which characterizes many works on ethnology, Doctor Woodruff's book is a masterly presentation of the subject.

MEDICAL RECORD VISITING LIST

The Medical Record Visiting List, or Physician's Diary, for 1916. Newly revised. New York: William Wood & Co., 1915. Price, \$1.25.

We take pleasure in announcing the appearance of the edition for 1916 of this visiting list, which has become a standard of its kind. It contains much valuable information to which the physician may want to refer in a hurry, such as dosage, incompatibles, weights and measures, treatment of poisoning and other emergencies. The book is bound substantially in black leatherette, with flaps, pockets, pencil, and other conveniences. Our readers who have been in the habit of using this visiting list will do well to act upon this reminder and supply themselves with the copy for the coming year.

STEWART: "SURGERY"

A Manual of Surgery, for Students and Physicians. By Francis T. Stewart, M. D. Fourth Edition. With 580 illustrations. Philadelphia: P. Blakiston's Son & Company. 1915. Price \$4.00.

This book is especially designed for the needs of the student, whose crowded hours demand a manual stripped of verbiage and unessentials, and for the general practitioner, who seeks a guide to everyday surgery. Everything, therefore, has been set down concisely and completely, and such suggestions have been made as to diagnosis and treatment as will best aid the physician in his daily practice. In short, the main object of the book is brevity and practicality. For these reasons, historical matter and bibliographical references have been omitted, and emphasis is laid upon those details which the author's experience has taught him to be of the greatest clinical importance.

In the present edition, the sections dealing with instrumental investigation, such as bronchoscopy, proctoscopy, radiography, and soon, have been expanded. Important changes have been made in the articles on transfusion, hemorrhage, spinal puncture, colectomy, hernia, tumors of the hypophysis, and surgery of the lung, liver, spleen, stomach and breast.

New sections have been added on the exclusion of the pylorus, esophagectomy, sporotrichosis, surgery of the hand, and transplantation of fat, fascia, bone and veins.

MIND AND HEALTH SERIES

Human Motives. By James Jackson Putnam, M. D. Boston: Little, Brown & Co. 1915. Price \$1.00.

The Meaning of Dreams. By Isador H. Coriat, M. D. Boston: Little Brown & Co. Price \$1.00.

Sleep and Sleeplessness. By H. Addington Bruce, A. M. Boston: Little, Brown & Co. 1915. Price \$1.00.

These three volumes constitute a part of an important and novel series of handbooks, to be written by eminent specialists and edited by H. Addington Bruce, and to be known as the Mind and Health Series. It is well recognized that in recent years there has been developed an entirely new department of the healing art, the outgrowth of the discovery of the intimate and subtle inter-relations between mental and bodily states in the causation and cure of disease. It is the aim of this series of books to present the facts pertaining to this new department, and the theories to which they give rise, in a form sufficiently non-technical and at the same time sufficiently detailed to insure their general understanding.

Doctor Putnam's book is a study of the psychology and philosophy of human conduct, based largely on the author's use of the Freudian psyche-analytic method of mental diagnosis. Besides being of great value for medical purposes, this method, as the author shows, has thrown a flood of light upon human behavior in general.

In the second volume Doctor Coriat discusses the psychology and psychopathy of dreams, with particular reference to their value in the treatment of nervous disorders, reinforcing his discussion with many concrete instances from his clinical experience as a neurologist and psycho-pathologist.

The third volume is from the pen of H. Addington Bruce himself. The author presents the contrasting theories of sleep, with emphasis upon some recent experimental studies which are of great practical, as well as theoretical, importance. The state of the mind in sleep is carefully examined from every standpoint. Finally, the ever-urgent problem of insomnia is taken up, its manifold causes reviewed, and the most approved modern methods of treating it plainly stated.

Five more volumes of this interesting and instructive series are now in course of preparation.

CHICAGO CLINICS

The Medical Clinics of Chicago. July, 1915. Volume I, No. 1. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. \$8.00 per year.

This is the first of a series, undertaken by W. B. Saunders Company, of periodical reports of medical clinics by the various distinguished clinicians of Chicago, similar in character and aim to the reports which the same publishers have been issuing for the last year or two of Doctor Murphy's surgical clinics. They hope in this way to present to the profession in each number a series of cases representing all branches of internal medicine which shall be word-photographs of the actual, up-to-date management of each case in its important phases.

The first number speaks for itself. It contains a most representative collection of case reports, including at least one, and in most instances more than one, from the clinics of Doctors Mix, Spencer Williamson, Abt, Preble, Goodkind, Tice, Hamburger and Hamill, respectively. In the second number, in addition to the above clinicians, Dr. William Allen Pusey is represented, with a contribution on x-ray and epithelioma. In their announcement, the publishers state that the publication of this series has been undertaken in response to a demand by the physicians of the country. Whether this be true or not, it is certain that the series will fill a real place in the needs of physicians.

SCUDDER: "FRACTURES"

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M. D. Eighth edition, revised, with 1057 illustrations. Philadelphia and London: W. B. Saunders Company. 1915. Price \$6.00.

Whenever one thinks of fractures, one thinks irresistibly of Scudder and his book, in the same way, and with the same attitude of mind, that one thinks of Stevens in connection with the steam engine. So classical, indeed, has this work become, that the reviewer finds it difficult to say anything of pertinence concerning it which has not already been said. It is some years since the last edition appeared. During that period the author has evidently kept well in touch with modifica-

tions of treatment, and such as have stood the test of experience he has incorporated in this new edition. He does not believe—and we agree with him heartily—that a permanent work should contain suggestions which have not been thoroughly tried out and found to be of permanent practical value.

In the author's judgment, the greatest recent advance in the treatment of fractures of bone is the application of the principle of autogenous bone-grafts in cases of delayed union and of non-union. This feature, therefore, finds considerable representation in this new edition of his book. Many new illustrations have been added. New material has been added upon fractures of the jaw, the acetabulum, and the greater tuberosity of the humerus, and upon separation of the lower epiphysis of the femur.

MALLORY AND WRIGHT: "PATHOLOGICAL TECHNIQUE"

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology. By Frank Burr Mallory, A. M., M. D., and James Homer Wright, A. M., M. D., S. D. Sixth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1915. Price \$3.00.

As the authors pertinently remark, in their preface, every autopsy presents for solution a problem which may be simple or complex. The known quantities are certain clinical symptoms and physical signs; the unknown quantities are the gross and microscopic lesions which may or may not have given rise to clinical symptoms or signs, the etiology of these lesions, and the order of their sequence. The solution of the problem often requires the highest skill in bacteriological and histological technic, but therein lies the fascination of pathological work.

It is to the systematic outworking of such problems that this book addresses itself, or, rather, instructs the attending pathologist how to address himself. The methods employed are presented in consecutive form, so as to avoid unnecessary repetition. The present edition contains a number of additions, partly of standard methods which have not been incorporated earlier because they seemed of less value to the pathologist than to the histologist, and partly of new methods which have appeared since the former edition was published. The book will undoubtedly meet the needs of the practitioner who has to do more or less pathological work.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6156.—“Potassium Permanganate and Amenorrhea.” B., Kansas, wishes to know whether potassium permanganate will cause a woman to menstruate. He is treating a young healthy girl of seventeen, who first menstruated when fifteen years old, but for the last six months has not done so. She is the picture of health, but has heard that if she does not menstruate she will “go into consumption.” Therefore she is insistent that something shall be done at once.

Potassium permanganate has been recommended for simple idiopathic amenorrhea. It is, undoubtedly, of some service if taken for two weeks before the date of expected menstruation. Of late, dioxide of manganese has to a great extent supplanted potassium permanganate, the dose of the former being 1 to 3 grains.

Potassium permanganate is easily decomposed; moreover, brought into contact with organic matter, it may cause an explosion. It is employed as an antiseptic and oxidizing agent, the peculiar property of the remedy being its readiness to part with oxygen.

In concentrated solutions, or in substance, it is a mild escharotic. Weak solutions (1 : 2000) are employed in purulent ophthalmia. In the strength of from 1 to 5 grains to the ounce, it constitutes a useful application for foul ulcers, cancer of the uterus, vagina, and so on. Solutions of varying strengths are also employed in the treatment of gonorrhœa, leucorrhœa, sore throat, ozena, and the like. It is also injected subcutaneously in the region of snake bites.

We should hesitate to give the drug, save in very small doses, for more than a few days, say, 1-64 grain every three or four hours, four to six days before the expected period.

Bear in mind that the drug can only prove useful in typical anemic amenorrhea. During the intramenstrual period, iron arsenate or, better still, the triple arsenates with nuclein should be administered.

Impress upon your patient the fact that failure to menstruate cannot possibly produce or cause consumption. Reversely, though, consumptive females may cease to menstruate or never begin to menstruate at all. Considering that your patient is the “picture of health,” there is no reason whatever for her fear of an oncoming phthisis. Make a careful examination of the pelvic organs.

Do not forget the possibility of retention of the monthly discharge. Is there any pain or distress of any kind at the monthly period? How often did the menses appear?

If the vaginal or cervical canals are not occluded and there is no flexion—ante or retro—of the uterus, with retention of menstrual fluid, it is more than likely that a course of the triple arsenates, or iron and manganese with caulophyllum, gr. 1-6, and vibrnoid, gr. 1-6, three times daily for a week or ten days prior to the period on which the menses should appear, will prove effective. Occasionally this writer gives quinine sulphate, gr. 1, every four hours during the last twenty-four. On retiring at night, the patient should take a hot foot-bath, keeping her feet and legs in a full pail of hot water for at least fifteen minutes. The limbs and the pail should be covered with a thick blanket and heat be maintained by the addition from time to time of fresh hot water.

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QUERY 6157.—“Intestinal Kink Causing Coprostasis.” A. F., Michigan, presents for consideration the case of a patient, a farmer 63 years of age, whose former weight was 185 pounds, but now is only 125 pounds. For the past three years, this man has been in the hands of all kinds of doctors, besides regular quacks, osteopaths, magnetic healers, and so on, but has steadily been slipping downward, until now he is confined to his room and bed most of the time. He has just come under our correspondent’s care, and the latter is anxious for our assistance.

For years this man had spells of severe pain in the stomach and bowels, and then from one to three morphine hypodermics have been necessary to give relief; recovery, however, was always perfect and no appreciable harm was done. Three years ago he began to have severe constipation, with "bleeding piles." He began to go down fast and commenced changing doctors, more particularly patronizing quacks of various kinds. His hemorrhoids do not bleed any now, but the colon will fill up for two or three weeks, then begins to empty, and enormous quantities of feces will be voided during two or three days. When the colon is finally empty, he will begin to pass frequently (every one or two hours, day and night) mucus of a most offensive nature. He suffers from pain and soreness all over the bowels, but this wears off as the bowel begins to empty, with the exception of a place in lower left flank. He is nervous and does not sleep, and is now taking some three or four codeine tablets (1-4 grain each) during the twenty-four hours.

This fecal impaction has been going on for three years. Appetite is good. Has had cystitis, but has that in control. When the colon gets packed, he can only just drag his legs around, and he suffers pain in hips, knees, and ankles (has been treated a good deal for rheumatism), but as soon as the colon is empty the pains all cease in the legs and he can use them properly. This the history.

We should be inclined to advise exploratory incision. Either an intestinal kink or an intraabdominal growth obstructing the lumen of the gut exists. However, before resorting to the knife, you might try high colonic flushing, commencing with half a pint of kerosene (patient in knee-chest position). The kerosene should be thrown into the transverse colon, through a rectal tube, followed fifteen or twenty minutes later by hot soapsuds. Be sure that this oil enema is completely emptied out again.

It is just possible, of course, that a tunneled enterolith exists (most frequently these are found in the region of the hepatic flexure), the more fluid feces passing through and remaining in the bowel, because of its atonic condition, until by some means or another it is evacuated. The cause of the whole trouble, however, remains behind and exactly the same conditions will recur. Kerosene will break up such a fecal mass in the majority of cases.

When the bowel is emptied, administer highly nutritious foods containing little waste, and every three hours give physio-

stigmine, berberine, and juglandoid in full dosage. This combination is a most efficacious peristaltic stimulant and intestinal tonic, indicated in colonic torpor and general intestinal insufficiency.

Morning and night give 1 or 2 ounces of refined liquid petrolatum (so-called Russian mineral oil) or, better still, the same quantity of petrochondrin, a combination of an acid-free and alkali-free petrolatum and emulsion of chondrus crispus (Iceland moss).

Massage the abdomen every day, following the course of the colon, or, better still, apply the faradic or sinusoidal current.

If these steps do not prove curative, operation is distinctly indicated, provided, of course, the general physical condition warrants such procedure.

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QUERY 6158.—"Hypernephroma." W. C. B., Nebraska, forwards a section of a tumor of the kidney for examination and states: "This represents a case of 'Christian Science' treatment of a tumor for about five years; and, so far as I can discover, this growth had been in existence for a longer period than that."

You have to deal with a hypernephroma. Such growths, as you are aware, arise from a portion of the suprarenal body which during embryonic life has remained under the capsule of the kidney or even of the medullary substance. The average length of life of such a subject is about fifty years. The evolution of such tumors is gradual, and it is very characteristic of this type of neoplasms that it does not give rise to any symptom before the fiftieth year of life, except for occasional attacks of dragging pains and sensations of pressure.

In the average case, hematuria occurs about five or six years after the first pain is experienced. In 80 percent of all cases, pain is present at some stage and may vary from dull backache to severe renal colic. It is interesting to note that cases have been described in which twenty years have elapsed between the first evidence of pain and discovery of the growth.

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QUERY 6159.—"Syphilitic Sore Throat." A. G. S., Illinois, has "a patient with (twenty-year) syphilitic sore throat; is very hoarse, can hardly talk." He asks: "Shall I give him bacterins, or drugs, or both?"

Tertiary syphilis of the larynx frequently proves extremely rebellious to treatment, though in cases treated reasonably early the prognosis is fairly favorable. Recovery of a

clear voice, however, can never be promised. "In the more advanced cases," Thomson says "the possibilities of rest, care, prolonged treatment, tracheotomy or operations for stenosis should be kept in mind."

We have not a clear enough idea of local and general conditions to enable us to prescribe very intelligently. Furthermore, are we to understand that the patient has suffered from this condition for twenty years or that he is twenty years of age? At all events, the voice should always be rested. Besides, the patient must be placed upon a light—preferably milk—diet. Tobacco and alcoholic beverages are prohibited.

Constitutionally, a mixed treatment should be instituted, though in the absence of urgent symptoms speedy relief can be secured by the use of the iodides. The following may prove advantageous: Mercurous iodide, gr. 1-12; stillingoid, gr. 1-3; strychnine arsenate, gr. 1-61; iron arsenate, gr. 1-32; quinine arsenate, gr. 1-32; nuclein solution, m. 5; this alternated with calx iodata in full doses. Or, give potassium iodide for one week, and calcidin the next, week and week about.

Local treatment sometimes is of secondary importance, while in other cases this must be prompt and energetic. Ulcerating surfaces must be sprayed or wiped with a solution of peroxide of hydrogen and dusted with iodoform, europhen or chinosol. This writer applies euarol with an oil-atomizer, and controls pain and dysphagia by means of insufflations of orthoform. It may be necessary to remove exuberant granulations with the curette or by applying a solution of nitrate of silver (15 grains to the dram), or, else a 25-percent solution of ichthylol. Moderate edema may be relieved by the sucking of ice. In severer forms, tracheotomy may become necessary.

The treatment of syphilis of the trachea is very similar, although more energetic procedure is essential. Mercurial impression should be secured by the inunction or intramuscular injections of gray oil or calomel. Fumes of sublimed calomel may be inhaled. The use of intravenous injections of salvarsan also must be considered.

QUERY 6160.—"Sudden Enlargement of Thyroid Gland." E. M. O., Tennessee, asks advice in the case of an unmarried woman, 28 years of age, heretofore in good health, who consulted him regarding her greatly enlarged neck, which she thought to be goiter. After close questioning, he decided that it was not goiter. He writes: "The young

woman has done lots of papering overhead lately, and I think that is what caused the thyroid gland to enlarge. It looks very much like goiter, but the enlargement occurred within three or four days. Her neck has never before looked enlarged at all, and I have seen her quite often. I put her on echinacea and chromium sulphate, 5 grains every four hours, and am applying iodine over the gland area."

With our very limited conception of regional and general conditions, we are unable to venture a definite opinion. It is hardly likely, however, that the position assumed in papering ceilings would cause enlargement of the thyroid gland. Do not forget, however, that many wallpapers contain arsenic and that absorption of this poison in any quantity, especially through the skin or mucosa, may cause such enlargement.

Remember, also, that in certain individuals the thyroid gland becomes temporarily enlarged without any recognizable cause, or it may do so at the menstrual period or in conditions causing congestion of the pelvic viscera. In very many instances, enlargement of the thyroid gland has been observed during pregnancy, the gland returning to its normal size shortly after delivery. Then, again, the enlargement of the gland is concurrent with the development of the mammae and persists during lactation. Unfortunately, our knowledge of the thyroid gland and its functions is still but very meagre.

We doubt the applicability of echinacea, under the circumstances, and believe you will get better results from irisoid and phytolaccaoid, in alternation with calcidin. Inunctions of potassium-iodide ointment will prove more effective than the tincture of iodine locally.

If you will submit a report on the examination of this patient's urine and give us more complete clinical data, we may be in a position to serve you more intelligently.

QUERY 6161.—"Parenchymatous Nephritis and Hepatitis." H. H. J., Iowa, requests an outline of treatment for a married woman of 50 years, mother of seven children. Her father and one brother died of "dropsy." Two years ago, she had 20 gallstones removed.

Her present symptoms are: Very marked dyspnea; cough, which brings up frothy sputum mixed with blood, sometimes pure blood. She has no valvular lesion of the heart; her pulse rate is 96 to 100; blood pressure registers 145 (systolic). There is anasarca of the abdomen, legs, arms, and

face. The urine: Amount, in twenty-four hours, 15 to 16 ounces; specific gravity, 1.025; large amount of urates; indican present; albumin, about 3 to 4 percent; hyaline and granular casts, and blood-cells. Diagnosis: Chronic parenchymatous nephritis. The amount of blood coughed up is, in the correspondent's opinion, "caused by passive congestion due to pressure," and he asks if emetine in 1-2-grain doses hypodermically would be of benefit.

We regret that you did not have the sputum examined and give a clearer idea of the pulmonary conditions, as revealed by auscultation and percussion. Doubtless, there is more or less hepatic involvement, with obstruction of the portal circulation, and, of course, the kidneys are seriously involved.

We should be inclined to place the patient upon a milk (or milk and cereal) diet. Also, give blue mass and soda, gr. 1-2, with podophyllin, gr. 1-6, half-hourly for four doses, every third night; salithia, the next morning. Apocynoid and scillitin might be given, in fairly full doses, every three hours, on the days when blue mass and soda is not administered—just sufficient to secure free watery stools. Such medication should be continued for a week, then suspended for two days. It is more than probable that emetine hydrochloride, administered hypodermically, would exert a beneficial effect on the hemoptysis. The prognosis of this case is, however, far from favorable.

This writer has had good results, in these cases, from the administration of hamameloid and collinsonoid, 1-6 grain of each, three or four times daily, taken with a mouthful of water. The patient may also, with advantage, inhale eucalyptized steam.

QUERY 6162.—"The Causes of Edema." W. S. W., Georgia, writes that he "now and then has a patient who has swollen legs, and sometimes swollen hands also—not 'dropsy', but just swelled up; but sometimes may have backache, and other pain." He asks what treatment he might try for this condition; and, also, if this is not often an expression of autotoxemia; saying that "often these patients have urinary hyperacidity and albumin, but that some have not. The bowels are somewhat sluggish in the case of most of them."

It is decidedly difficult to answer your question relative to the proper treatment of localized edema; for, in order to institute proper therapeutic procedure, one must have a somewhat definite idea of the cause of the

trouble. "Dropsy" is a general term, and indicates an accumulation of watery fluid in the serous cavities or a general diffusion of such fluid through the tissues of the body. "Edema" designates the effusion of watery fluid into the tissue of a circumscribed area. "Anasarca" means a generalized edema.

Edema is usually due to a disturbance of the relation between the amount of fluid which transudes from the capillaries and that absorbed and carried away by the lymphatics. The causes of edema may be: (1) Venous obstruction; (2) toxemic or hydremic conditions of the blood; (3) effect of inflammation upon the neighboring circulation; (4) vasomotor or other causes belonging to the nervous system; (5) lymphatic obstruction. Besides, there is a form termed idiopathic edema, the nature of which is not yet understood.

Bear in mind that edema not due to a discoverable morbid condition is far from infrequent.

Circumscribed edematous swellings are observed over the precordial space in pericarditis; the affected side in empyema; over the mastoid process, in inflammation of the mastoid cells; over the parotid gland in mumps; over the region of the appendix, sometimes, in appendicitis; the posterior lumbar region, in perinephritic abscess; and it may be associated with a subcutaneous infection in any part of the body.

Edema of the upper half of the body is observed in the early stages of renal dropsy; of the arms, head, and neck in thoracic aneurism; hydrothorax in mediastinal tumors pressing on the vena cava above the entrance of the azygos veins; when the point of pressure is below the azygos veins, the arms, thorax, head, and neck become involved. Cardiac edema is at first localized and makes its appearance primarily in the feet, whence it may extend upward. Local edema may be caused by thrombosis of or pressure upon a venous trunk. Angioneurotic edema is a singular disease in which edematous swellings appear or disappear at frequent intervals, in the face or the extremities. It is not rarely observed.

Thus, it is evident that there can be no set treatment for "dropsy." However, correction of any underlying disorder of the body-chemistry and maintenance of thorough elimination are invariably indicated.

Calcium carbonate, with lithia, would certainly prove useful where hyperacidity is known to exist, though more marked results would probably follow the administration of some such course as this: Sodium sulpho-

carbolate, grs. 2 1-2; sodium sulphate, grs. 5; sodium bicarbonate, grs. 20; colchicine, gr. 1-500; juglandoid, gr. 1-6; xanthoxyloid, gr. 1-6; besides sodium chloride and aromatics, a sufficient quantity. Such a dose to be taken three times a day, preferably an hour before meals.

In this connection, let us suggest that you read carefully the chapters on dropsy, edema, and anasarca, in Butler's "Diagnostics of Internal Medicine."

QUERY 6163.—"Emetine and Quinine in Hemoglobinuria." R. B. K., Tennessee, wishes to know if pituitrin and emetine hydrochloride are indicated or contraindicated in malarial hemoglobinuria? He would like to learn from physicians who have had to treat malarial-fever patients in our southern regions. Also, "for the sake of argument," he asks the same relative to quinine. "This latter question," he remarks, "may seem foolish to some, but I have met many doctors who do not use quinine and, yet, have fine success."

To the best of our knowledge, neither pituitrin nor emetine thus far have been used in malarial hemoglobinuria, but, herewith we present the subject for general consideration by the readers of CLINICAL MEDICINE.

As to the subject itself, we must bear in mind that there are three theories regarding the etiology of hemoglobinuric fever, namely: (1) That it is the result, directly or indirectly, of malarial infection; (2) that quinine is the cause of it; and (3) that it is a definite disease, caused by a specific parasite.

We are inclined to the last view, for several reasons. The lesions in hemoglobinuric fever are confined to the kidneys, liver, and blood. In the viscera, acute congestion and areas of necrosis are found, evidencing the action of a powerful toxin. The blood shows a decrease in the number of red cells, and a marked increase in the large mononuclear variety. The urine not only contains hemoglobin, but also the other usual evidences of acute tubular nephritis.

Manifestly, views so divergent regarding the etiology of the disease, as above indicated, result in widely varying treatment.

Many southern practitioners, believing firmly in the malarial nature of the condition, strongly advocate the use of large doses of quinine; indeed, not a few clinicians regard this drug as a specific, although in the vast majority of instances no real proof

exists that it is of any benefit whatever. It most certainly is not if the plasmodium malariae can not be demonstrated in the peripheral blood.

On the other hand, practitioners equally well informed warn strongly against the administration of quinine, in this disease, in any form. Probably the real indication for its use in hemoglobinuria, as elsewhere, is, the established presence in the blood of malarial plasmodia. Should no malarial complication exist, it is doubtful if quinine should be given, as there is no proof, under the circumstances, that it is of benefit. Large doses, indeed, are quite likely to do material damage. Statistics tend to prove that the mortality is greater when quinine is being prescribed indiscriminately.

It must be borne in mind that there is a difference between true hemoglobinuric fever and hemoglobinuria following the administration of quinine in malarial infections. There is no question that in certain individuals both quinine and the malarial plasmodium may cause hemoglobinuria, but these attacks are not true blackwater-fever and differ greatly from the clinical picture of that disease.

Hare, in "Modern Treatment," presents the following rules as governing the administration of quinine in hemoglobinuric fever:

"1. Quinine should be administered to all patients suffering from hemoglobinuric fever if malarial plasmodia are demonstrated to be present. The dose should be sufficient to cure the malarial infection.

"2. The drug should not be given to patients in whom the malarial plasmodia can not be demonstrated.

"3. If hemoglobinuric fever occurs during the administration of quinine for a previous malarial infection and the plasmodia can still be demonstrated in the blood, the drug should be continued until the plasmodia disappear.

"4. If the disease develops during the administration of quinine and no plasmodia can be demonstrated, the drug should be discontinued.

"5. As there is no proof that quinine has the least effect upon hemoglobinuric fever and is distinctly harmful if given in uncomplicated cases, it follows that this drug should not be used in the treatment of this disease, except when a malarial complication can be proved to exist.

"6. In patients giving a history of hemoglobinuria following the administration of quinine, the drug should not be given; some

substitute for it being used if a malarial infection be present."

The use of calcium chloride has lately been strongly advocated.

In this connection, let us call your attention to a very interesting phase of the subject presented in Query No. 5882, which appeared in the February, 1913, issue of CLINICAL MEDICINE.

The correspondent in that case had had under treatment a very bad case of hemoglobinuria and he expressed the belief that one of the predisposing factors is acid intoxication. In our reply, we pointed out that most individuals suffering from malaria may receive comparatively large doses of calomel or of calomel and podophyllin, followed by a laxative saline draught; and that in a large number of cases the sulphocarbonates are given freely. Evidently, any academia present will, in that way, be corrected. We also pointed out that many observers in southern states agree that quinine in full doses is liable to produce hemoglobinuria; that, quinine being a protoplasmic poison, always renders hemoglobin unstable and destroys the red cells. If this action is added to the destruction wrought by the plasmodium malariae, it obviously would cause the escape of hemoglobin into the urine.

It must also be remembered that many times hemoglobinuria is the diagnosis given when, in fact, the condition we have to deal with is hematuria.

In hemoglobinuria occurring in a malarial patient, it is probable that the plasmodia malariae act directly upon the blood-cells in the parenchyma or renal tubules, such hemocytolysis causing hemoglobinuria. This question has never been definitely settled, but we do know that, in many cases of so-called hemoglobinuria, blood in large quantities has been discovered; that, in fact, hematuria existed.

Extremely high temperature is just as likely to produce hemoglobinuria as does the

ingestion of large quantities of quinine, both agencies breaking up the close adhesion of the hemoglobin to the blood-cells and causing its liberation.

In blackwater-fever, so called, the causative agent undoubtedly is the toxins that exert a deleterious action upon the erythrocytes. This action may be increased if quinine be taken; or, the drug itself, given for therapeutic effect, may produce hemoglobinuria.

It is probable that in certain toxemias the combination of the hemoglobin with the stroma of the blood-disks has become looser than normal, and, so, causes that ordinarily would be harmless will then prove sufficient to produce separation of the hemoglobin. In this way, we could readily account for "paroxysmal hemoglobinuria," so called, which manifests itself after the initial phenomena of the chill and the quick rise of the temperature to 103 or 104 degrees. The urine voided after such a chill often is smoky or brownish-red in color and contains hemoglobin in large quantities. This condition may persist for some time, much depending upon the intensity of the toxemia—that is, the disintegration of the blood-corpuscles.

The whole subject is of intense interest, and we hope that the presentation of this question will lead to an expression of opinion from those who have had extended experience in the treatment of hemoglobinuria.

LATER.—In a letter just received from one of the most distinguished authorities on malaria in this country, who has been giving emetine a careful clinical trial in malarial hematuria, he says: "So far as I know, there are no published accounts of the treatment of malarial hematuria with emetine, but we have tried it with marked success in this form of hematuria and hemoglobinuria, as well as in other forms." The testimony of this gentleman will undoubtedly lead to a general employment of emetine in this condition.



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Bouchard's Great Work

NEWS has come to us quite recently of the death of Bouchard; but as yet we have received few particulars. Whether he died peacefully in his bed we know not; but this we do know—and the world acknowledges—that even among that brilliant group of modern scientists who have done so much to make French medicine illustrious there is none who has accomplished more for the benefit of mankind than has Charles Bouchard.

Bouchard took for his special study the most common of human ailments—one whose existence was scarcely acknowledged until he placed it before the world with that clarity and force for which his race is noted. Just as his compatriot, Fournier, so plainly set forth the cardinal truths about syphilis—its perils, its clinical manifestations, and especially the extended course of treatment necessary for its eradication, so Bouchard in equally clear manner told us of the deleterious consequences of fecal autotoxemia and of its curative management. Regarding both we may truthfully say that there was not so very much of original discovery or of aught that was not already known in a general way to the medical profession; but, that is exactly why in both instances

the work was so speedily taken up and the teaching absorbed by the clinicians at large—we already knew the truth of the contentions set forth by these two acute observers.

Both men took the current beliefs and submitted them to scientific investigation by modern methods, giving us consistent proof of what we already had felt to be true. We knew that the urine was toxic—Bouchard told us what were the poisonous elements in it, and which of them induced convulsions and other symptoms. We believed that fecal toxins absorbed from the bowel were responsible for much disease and for even more cases of indefinite malaise—he showed us how to detect the toxins in the urine, and he recognized the clinical manifestations. He brought together the facts about elimination and assembled many scattered bits of knowledge, to make a harmonious working-hypothesis; which subsequently has been developed into a theory, one of the fundamental principles upon which our clinical work is founded.

Thanks to Bouchard, we now are in position to recognize readily the symptoms of fecal autotoxemia; and the elimination of this factor of disease forms an essential feature of our routine measures—quite as

generally as feeling the pulse and looking at the tongue. It is a matter of course now that treatment of any kind of disease shall be begun with emptying the bowels and keeping the urine free from indican and its congeners.

Naturally, Bouchard's propositions met the opposition invariably meted out to the promulgation of radical or revolutionary theories; but it is significant that so very little attention has been paid to the opposition by the body of practitioners. Somebody gets up to assert that "there is not a scintilla of proof that the theory of fecal toxemia is really true or that the symptoms ascribed to that condition are consequences of it"; but the experienced doctor listens to such statements much with the air of him who hears someone declare that there is no such thing in nature as gold, while the hearer has his pockets full of the precious metal. This happens to be one of the cases where every doctor has the right to an opinion of his own — his own experience constitutes him a qualified judge.

While there has been a rich development from Bouchard's original work, there has been practically nothing which he had to withdraw. Lane and others have simply built upon Bouchard's foundation, and found it substantial.

Work dispels discouragement because it turns consciousness away from our disheartening littleness and lights up the big world—our world—of possible achievement.—R. C. Cabot.

"GRIP" THAT IS NOT GRIP

We are now in the midst of a pandemic of a disease that is ordinarily referred to as grip, but which, thanks to the bacteriologist, we know is not true influenza. This disease at present is epidemic from one end of the country to the other, but apparently is rather more severe throughout the upper Mississippi Valley than in the far west and the south. The United States Public Health Service has found the condition serious enough to warrant a general warning to the people of the country, in view of the very high death rate for which it seems to be responsible.

The organisms causing this disease, according to general agreement, are mainly various strains of streptococci and pneumococci, with a scattering of staphylococci, Friedlander's bacillus, micrococcus catarrhalis, and, perhaps least frequently of all, the influenza bacillus. The germs most common, most numerous, and mainly responsible for the disease are

the streptococcus and the pneumococcus, and the almost uniform presence of the latter undoubtedly explains the frequency with which pneumonia follows an attack.

The seriousness of the situation is pretty clearly shown by the death reports issued by the Chicago Health Department. Thus, prior to December 1, last, the number of deaths from pneumonia were in the neighborhood of, but did not exceed 50 per week. By December 11, the weekly number had mounted to 77; the report of December 18 gave the number of deaths as 108; that of December 25, 205; and that of January 1, the enormous total of 302 deaths in a single week from pneumonia.

The cases of this prevailing grip that have come to our attention present characteristics considerably different from those of influenza of prior years. The attacks are no less severe and the prostration temporarily is extreme; but cough is a less prominent symptom and recovery is much more rapid than in the former epidemics. In many instances, there is present a complicating conjunctivitis, aural and sinus troubles frequently occur, and sore throat is not uncommon and often severe, assuming characteristics not unlike the "streptococcal sore throat" epidemic in a number of our states some two or three years ago.

For a study of the bacteriology and bacterin treatment of this infection, we refer our readers to the fine paper by Doctor Biehn appearing elsewhere in this issue. At this point, we wish to support strongly the emphasis which he lays upon the danger of complicating pneumonia and the necessity for immediate and urgent treatment, not alone in order to cut short the attack, but to forestall the possibility of any possible pulmonary complication.

There is no doubt that prompt relief can be, and should be, secured in nearly every case by resort to a stock bacterin containing streptococci and pneumococci—either these two organisms alone or in association with staphylococci and (occasionally) Friedlander's bacillus, which latter also are sometimes factors. If a full dose of this bacterin is injected at the very beginning of treatment, in the majority of instances the severity of the attack will be ameliorated, and this is particularly true if there is a prompt reaction. Usually two doses of the bacterin are sufficient to produce the results desired.

However, no physician should rest his case on bacterin-therapy alone, valuable as this undoubtedly is in the prevailing epidemic.

There is one remedy that has a peculiar affinity for the respiratory tract, and that is iodine, this being eliminated in part through this channel.

Given in appropriate doses, particularly in combination with calcium—in the form of calx iodata—iodine can be depended upon to bring to the respiratory blood stream and the bronchial secretions a constant supply of this powerful antiseptic. It is this affinity of iodine for the respiratory mucosa that makes it a favorite remedy with so many physicians in all the diseases occurring in this area. It seems to be particularly efficacious in meeting and suppressing pneumococcic infections.

There are other remedies of almost equal value. Quinine is a favorite with many physicians, and, when given early, it undoubtedly does help to abort an incipient cold, probably because of its power of increasing phagocytosis. For the same reason, nuclein is indicated, while calcium sulphide is an active and effective germicidal agent that may well be given in alternation with other remedies.

If we were to select three agents of greatest value for aborting a beginning cold, these would be: calx iodata, quinine, and calcium sulphide.

In the febrile stages of these "grip" cases, the small, repeated doses of aconitine—alone or in the combinations represented by the two defervescent combinations, which contain veratrine, digitalin, and strychnine arsenate—will help to regulate the vascular apparatus and bring down the temperature, while relieving the pulmonary congestion.

Thorough and immediate purgation is also a necessity, especially at the beginning of the attack; and, where the upper air-passages are hyperemic, small, repeated doses of atropine or hyoscyamine, just to the point of producing slight dryness of the throat, will help to dissipate beginning congestion.

But, to recur to bacterin-therapy: In view of the tendency of these attacks of grip to become pneumonic, we urge again early resort to these vaccines; for, we are convinced that, if the indicated bactérins are administered to persons who are coming down with the disease, a protective immunity can be secured, with a saving of much sickness and very many lives.

Pneumonia is the new "captain of the men of death," claiming more victims each year than does tuberculosis, more than war, more than pestilence. Physicians should realize that it is distinctly a contagious disease, and

that, furthermore, the "harmless" common cold that makes its appearance in one's family and among one's neighbors, in very truth transmitted from hand to hand, and mouth to mouth, and home to home, is practically the cause of it all. It is a transmissible disease; but if you and I do our share, both in the way of education and in prophylactic treatment, it is quite within the reach of possibility for us to wipe this enemy of the race off the slate.

Let this be our slogan—"Pneumonia next!"

Ah Love! Could you and I with Him conspire
To grasp this sorry scheme of Things Entire,
Would not we shatter it to bits—and then
Remould it nearer to the Heart's desire!

—The Rubaiyat.

MAKE A GOOD APPEARANCE

The writer remembers an old joke, that was going the rounds of the funny papers when he was a young fellow, concerning a man who found a scrap of paper in his pocket, with hieroglyphics scribbled all over it, and who scratched his head in considerable perturbation as to whether it was a prescription from his physician or a check from the Chinese laundry.

This is an extravagant story, of course, but with a good sized grain of truth in it. It is not so very long ago that it was considered quite professional to write prescriptions and letters in an almost undecipherable hand; indeed, a physician's reputation and standing were in direct proportion to the illegibility of his handwriting. Which, by the way, was pretty hard on the dispensing pharmacist; and I rather think it was because of the mistakes that the druggist made, very excusably, every once in a while, and the consequent protest of pharmacists as a class that 'his one time abominable habit of physicians fell into disrepute.

However that may be, happily, it is no longer regarded as a mark of erudition on the part of the doctor to scrawl so that nobody can decipher his writing, particularly prescriptions. Not at all, on the contrary, quite the reverse, as Artemas Ward used to say. We understand that the professional man in England still clings to his pen and ink; but in America even this practice, so far as its traditional aspect is concerned, has gone by the board—along with a great many equally foolish traditions—in favor of the more sensible modern use of the typewriter.

As has frequently been insisted upon in these pages, the practice of medicine, in itself,

is not, and never can be, a business; and latter-day attempts to turn it into a business not only have wrought all sorts of havoc with the profession, but have brought disappointment and heartburnings to those who have tried the experiment.

On the other hand, as has just so frequently been pointed out, there is not the slightest reason why the business functions that necessarily accompany the practice of medicine should not be carried out in a businesslike manner. In this country, at all events, we long ago have dismissed the groundless idea that good science and good business are incompatible; in fact, we have just about reached the opposite conclusion, namely, that a man can hardly be a good scientist, certainly not a good practical scientist, if he is not a good business man. At any rate, we have come to the point where the earmarks of a good business-like temperament predisposes us to a favorable estimate of a doctor's scientific capability.

This twofold characteristic, in fact, may be said to constitute the distinguishing mark between the old-fashioned and the modern up to date physician—the workman-like fitting of his workshop and the business-like appearance of his *entourage*. The former equips him to do good work; the latter bodies forth his value to the world, in precisely the same way (do not be offended for our saying it) that the store-window and advertising-matter display the character of a mercantile house.

Not, by any means, least among the features of this latter *accoutrement* is the neatness and elegance of his correspondence. A tasteful letterhead and prescription-blank, a neatly typewritten letter and prescription, these have immense influence in the opinion which the public forms of your character and efficiency; and rightly so, for they do actually reflect your attitude toward your clientele and your work. Those with whom your professional relations lie have a right to expect of you the courtesy and consideration expressed in such amenities; and if they find you slipshod in these little things they are justified in assuming that you are equally shiftless in the greater things.

In former days, a neglect of these matters might have been excused on the ground of prohibitive expense, but today no such excuse is valid. Not only are good stationery and serviceable typewriting-machines comparatively inexpensive, but the terms upon which the latter can, nowadays, be bought are within the reach of virtually every prac-

titioner. We are carrying, every month, in the advertising-pages of this journal the most liberal offers from typewriter concerns, which make it possible for every physician to conduct his correspondence and his prescription writing in accordance with twentieth-century demands. And, in fact, he *must* do so, if he is to keep up with the modern procession.

A small matter, you think? Yes, but small things make perfection; and perfection is no small matter! If you have not considered this before, doctor, do so now. Buy a typewriter, get yourself some highgrade, tasteful stationery, and make upon your clientele and correspondents an impression that is commensurate with your actual worth.

What'er you dream, with doubt possessed,
Keep, keep it snug within your breast,
And lay you down and take your rest;
Forget in sleep the doubt and pain,
And when you wake, to work again.
The wind it blows, the vessel goes,
And where and whither, no one knows.

'Twill all be well: no need of care;
Though how it will, and when, and where,
We cannot see, and can't declare.
In spite of dreams, in spite of thought,
'Tis not in vain, and not for nought,
The wind it blows, the ship it goes,
Though where and whither, no one knows.

—Arthur H. Clough.

OUR ANNUAL INDEX

Following our practice of several years back, we did not bind the annual index with the December number of the journal. It has been prepared, however, with our usual care, and by the time this number of CLINICAL MEDICINE reaches you we hope it will be ready for distribution. A copy will be sent gratis to any subscriber requesting it. It is our sincere wish to give it the widest possible distribution among our readers, and, so, we hope that all, without exception, will write for it, and then have their journals nicely bound; for, as every careful reader will agree, a bound volume of CLINICAL MEDICINE constitutes a veritable encyclopedia of current medical knowledge. The physician who has on his shelves a series of these volumes can find in a moment just the help he needs in almost any emergency.

We are particularly proud of this year's index. It has been prepared with greatest care, by one who has specialized in the difficult work for many years. It is voluminously cross-indexed, and with all will be found indispensable to any busy practitioner who has acquired—as he certainly should—the index-habit.

Please send in your request immediately, right now—a postal card will do. We may add that we have in stock a limited number of the indexes for some of the preceding volumes; and a copy (while they last) will be sent to anyone wishing to bind back volumes.

Drudgery is as necessary to call out the treasures of the mind as harrowing and planting those of earth.—Margaret Fuller.

THE PROGRAM OF THE AMERICAN COLLEGE OF SURGEONS

We have received from John G. Bowman, director of The American College of Surgeons, a statement of the plans made for the development of the work of this organization. We learn that the 3400 Fellows of the College living in the United States and Canada have begun the new year by raising an endowment of \$500,000, this fund to be held in perpetuity, for the purpose of advancing the standards of surgical knowledge and training in America.

It is certainly indicative of its fine spirit, splendid organization, and remarkable capacity for teamwork that the College has been able to evolve, without friction or other difficulty, an intelligent plan for constructive work; and this plan is to find concrete expression, we are informed, along the following lines of activity, which are made possible by the endowment-fund now available:

1. The College purposes to supervise and standardize the preparation of students for the practice of surgery and allied specialties. The regents of the College will begin this work by asking every senior medical student who has in mind specialization in general or special surgery to register his name with the College. As these students serve later as internes and surgical assistants, careful record of their activities will be kept by the College, so that their ability, character, and fitness for admission to fellowship in the College may be determined; the purpose being, not only to utilize this preliminary supervision as a test for membership, but also to stimulate the young men themselves to do better work; all this with the view to the creation of a class of surgeons, in this country, of whom we may all be proud.

2. The College is planning to collect and classify all possible information relative to our American hospitals. This information will be published from time to time, in form available for distribution, and will deal with such problems as hospital equipment, laboratory equipment, the keeping of case-records,

the training of nurses, and the various forms of specialization essential to the conduct of any well-organized hospital. In other words, as we understand it, the purpose of the College is, to endeavor to "standardize" these institutions, with the object of improving the quality of all of them, in order to enable them to do better work.

3. The College expects to ask the faculties of our medical schools to consider the advisability of conferring a supplementary degree of efficiency in general surgery and in the various surgical specialties.

4. The institution will issue, from time to time, monographs of an educational nature relative to medicine and surgery, suitable for distribution among the general public, managers of hospitals, and the medical profession at large.

This program, we submit, is a splendid one—one which we believe will win the hearty approval and cooperation of the medical profession as a whole. During the early days of The American College of Surgeons, there was aroused a great deal of criticism of this organization within the profession, on the ground that it would have a tendency to create what was loosely called a "surgical trust."

Every physician is, necessarily, more or less of a surgeon. In America, at least, the welfare and the interests of the general practitioner and of the surgeon and other specialists are inextricably bound up with each other. The fear was expressed that any scheme of things intended to set one portion of the profession apart from and above the other would have an undesirable, undemocratic effect.

Such a possibility must, of course, be kept in mind, though we feel that an organization having the high ideals and the splendid purposes expressed in this general scheme for the betterment of one branch of the profession, in the end can work only good. Its excesses—if any such develop—are sure to be checked and controlled by the severest criticism. And, frankly, we hope there will be free, searching criticism, since this is the saving clause of our democracy; and we further fervently hope that the time never may come when the "holier than thou" spirit will control our medical institutions.

There is much in the plan of the American College of Surgeons, as outlined above, that may well be incorporated in the plans of the entire profession. The feature that particularly appeals to us is, that these plans are constructive, not destructive; that they aim

to build up rather than to tear down; that they begin at the bottom, with the membership; lastly, that the ultimate aim is, not, indeed, the creation of a special caste, that would try to run things by privilege or through politics; but, rather, the raising up of a generation of strong, well-informed, self-respecting, skillful surgical practitioners.

If there is any work that requires the delicacy and finesse of the college president, the corporation executive or the foreign diplomat it is that of the medical practitioner with a large and varied practice.—Edwin P. Haworth.

KNOWING MIGRAINE—TREATING IT

The modern study of migraine began with Anstie, whose two books, "Stimulants and Narcotics" and "Neuralgia," set the world to thinking. Many phenomena described by Anstie are still acknowledged today as characteristic of the true neuralgias. Among these, he placed migraine; and that this is a neuralgia most of us will admit. However, in his day, autotoxemia had not been thought of; although before him the custom of the profession, to begin treatment, as a routine measure, by emptying the stomach and bowels, was a quite general one for the condition, the nature of which has since then been discovered. We look now upon the bad breath attending migraine, not as a symptom of that disease, but as evidence of its cause.

Not all cases of migraine are attributable to the intestinal tract. Some of these attacks attend menstruation too regularly to be accidentally coincident. Heredity is a recognized factor. Eyestrain, ethmoidal, nasal, aural, dental, and pharyngeal disease have all been shown to be so associated with migraine that specialists in each, seeing many cases in their own respective departments and none in the others, are prone to credit their own pet apparatus with the causation of every case of migraine.

To the foregoing causes, Shoyer adds the ductless glands as a probable source. This author calls attention to the cases that begin with the setting in of menstruation and end with the menopause. This leads him to surmise that there may be present some disorder of an internal secretion, from the thyroid or pituitary gland or the corpus luteum. If this be so, observations might be instituted concerning the influence of marriage upon women subject to migraine, in consideration of the consequent stimulation of the thyroid gland. The addition of thyroid or corpus-luteum extracts to the eliminant remedies

always indicated might work well. Still, Shoyer rather spoils his own proposition by adding cannabis to his prescription. If this agent be requisite, then the influence of the animal-extracts can not be, in itself, sufficient. However, the influence of habit is always to be considered, for, any neurosis may persist after the original exciting cause has ceased to act.

Harrover, in a valuable contribution to *American Medicine*, cites some corroborative evidence. Kovalewski observed the disappearance of migraines during pregnancy, when the thyroid gland was stimulated to increased activity. Levi succeeded in six cases of migraine by giving thyroid extract. Charcot had noticed the connection between migraine and chronic rheumatism, and the relief of both by prescribing thyroid gland. Gauthier insists upon the connection between migraine and thyroid or ovarian disease.

Harrover suggests doses of luteal extract, 5 to 8 grains, with 1-4 to 1 grain of thyroid extract, three times a day for two weeks, this period ending just at the entrance of the menstrual period, the remedies to be omitted during the subsequent fortnight.

We are not convinced, and should limit the treatment to cases in which there are other evidences of thyroid-gland deficiency. Then, as is so frequently the case, we should probably find that the remedy given for the deficiency also benefited any other morbid condition present at the same time. Also, we should not omit that attention to the alimentary canal which alone cures so many migraines.

If you think you are outclassed, you are;

You've got to think height to rise,

You've got to be sure of yourself before

You can ever win a prize.

Life's battles don't always go

To the stronger or faster man,

But soon or late the man who wins

Is the fellow who thinks he can.

THE INDICATIONS FOR ALCOHOL

This journal has long since taken the stand that there is no true indication for alcohol as a medicine, and that its use as such is a mere excuse for indulgence or laziness. We assert that there is not a solitary application to which alcoholic preparations can be put for which there are not better remedies at our hand. The one reason for the use of alcohol as a remedy is, that it does so many things fairly well; and the lazy doctor contents himself with this, instead of finding the one remedy that is better in each case.

A plea for alcohol as a remedial agent appears in one of our exchanges, a journal of deservedly good reputation and high standards. We do not mention the name of this publication, since, in our opinion the argument presented for alcohol should be taken upon its merits, irrespective of the interests back of it. What concerns us is, the truth or the falseness of the thing, and not whether the article is engraved on tablets of gold or imprinted on pitch. Let us examine in detail the claims made by our colleague.

The first indication claimed for alcohol is when pneumonia occurs in a person accustomed to the daily taking of alcohol, though not necessarily to excess. Here, it is advised to give small doses of the stuff every three hours, to prevent the nervousness and depression occasioned even in health by stopping the stimulant.

More than a half century ago, N. S. Davis began the movement against the use of alcohol as a medicine, and this has steadily grown until now it is generally admitted that this agent is not the necessity it was then considered. This use in the pneumonia of drinkers was one of the last strongholds of the alcohol-advocate. Everyone who has tried impartially to do without it here has found Davis right and shown alcohol to be useless.

The chief peril in pneumonia is toxemia; yet, alcohol itself is a most potent cause of toxemia—it adds a danger here as in so many other cases. Such a patient needs elimination and cardionervous support; and his peril is greater than that of the nonuser of alcohol. Careful nutrition, coffee, cardiac tonics, and elimination will save more lives if the alcohol is omitted. Nervous phenomena indicate the need for more elimination and a suitable supply of food; the only indication added by reason of the alcohol-habit is, extra care of the heart.

The second indication is, in some cases of delirium tremens (not many), where small doses are advised, large ones being always deleterious. Here again the experience of those who have treated many cases, in hospitals, is against this plea. Every drop of alcohol taken by the delirium-tremens patient militates against his chances for recovery. We have passed many phases in the treatment of this malady, beginning with the sedatives and narcotics and ending with the eliminants. This condition is a pure toxemia, and it is successfully treated with emetine, purges, pilocarpine, and by very carefully sustaining the vitality—and especially the

heart. Capsicum gave better results than narcotics; coca was an advance, but the modern method, by elimination, leaves nothing to be desired as to results, especially when the right eliminant is selected.

The third indication is, when alcohol is being withdrawn from habitués with arteriosclerosis, degeneration of the heart-muscle, kidneys, perhaps of the central nervous system; when the alcohol should be withdrawn gradually. This can scarcely be called an indication for alcohol, and there may well be a psychic need for the procedure, as the patient may not be willing to stop suddenly. Moreover, we are not indisposed to acknowledge the influence of habit, and the possible peril in abruptly stopping even a bad habit in persons well past the age of growth. But the evil is often due to the fact that the semblance of robust health may have been imparted by the alcohol, while its withdrawal leaves the patient as he really is; seemingly worse, although he may be truly in better condition. "He was a mere shell of a man" we often hear when such a one falls under some trifling malady.

Fourth: Severe cases of diabetes mellitus; "Diabetics apparently are able to burn up large quantities of alcohol, not only without detriment, but with great benefit. . . . During the oatmeal-days, alcohol can be used in large quantities, with good effect."

This point should be left, for discussion, to the specialists in diabetes. In his own practice, the present writer has not found need for alcohol in such instances, although he can see how these self-indulgent people may more readily submit to the occasional "oatmeal-" or "potato-" or "greens-"days if these viands are plentifully seasoned with booze.

These are the only indications given by the author referred to at the outset; but he adds: "In the whole range of infectious fevers, alcohol was thought to be a necessity; but professional opinion has changed. It is not to be employed as a heart stimulant, but may be justifiably used as a narcotic in certain cases." We are scarcely so poor in narcotics that we must take this doubtful and dangerous agent, alcohol, for such use. The profession has hardly begun to realize here the value of the mild nonopiate members of this group. Many a time a dose of passiflora will answer the need perfectly. To those who know gelseminine and cicutine hydrobromides, neither alcohol nor opium-derivatives are a necessity here.

The contraindications for alcohol, as enumerated in the article in question, are interesting. Here they are:

(1) As an appetizer, (2) as a food, (3) tuberculosis, in all stages, (4) nervous diseases, (5) exposure to heat and cold, (6) snakebite and other acute poisoning, (7) normal health.

It will be seen that in at least three of these—the third, fifth, and sixth—alcohol was, until recently, employed, and they formed strongholds to which the alcohol advocate retreated when beaten out of all other positions.

The whole article shows how very little the pleader for alcohol can find to claim in its favor; and when the objections are marshalled against it, in these few possibly useful applications, there is only one real reason left for using alcohol—and that is—that the user wants it.

Loyalty is a force that holds a man to his job even in moments when he hates it. . . . It bids us be prompt at the office, to answer all letters at once, to look as brisk and interested as we can, till the mood passes and the familiar objects and occupations resume their halos.—R. C. Cabot.

INDIANA AND THE DISPENSING DOCTOR

From a number of our subscribers in Indiana we have received requests for information concerning the exact meaning of the Indiana state narcotic law. It seems that alleged representatives of the Indiana State Board of Pharmacy are calling upon physicians of the state and advising them that, according to the wording of the law approved on March 6, 1913, it is unlawful for them to *dispense* any narcotic drugs whatever. This interpretation is said to be based upon a paragraph in the law that reads as follows, emphasis being placed upon the distinction between "administer" and "dispense":

"That nothing in this act shall be construed to prevent the legitimate administering of said [narcotic] drugs, their salts, compounds, and derivatives, by a duly registered practicing physician, duly licensed veterinarian, or duly licensed dentist."

We recall distinctly when this act became a law. At that time, it was explained, and was so understood and accepted by the medical profession of Indiana, that the word "administering," as here used, was intended to convey the meaning of giving—dispensing—drugs to their patients. But now another construction is being placed upon the meaning of this word, this construction no doubt

following upon the interpretation of the meaning of the word "administer" given by the Federal Commissioner of Internal Revenue in one of his recent regulations.

We do not live in Indiana—and just now we are glad of it. But, if we did, we are inclined to believe that we would join with other physicians to give this interpretation of the law a very merry fight. If the word "administer" was purposefully introduced, with the distinct object of putting restrictions upon the medical profession of Indiana, then, surely, the physicians of that state have a bone to pick with its pharmacists; and we are convinced that, if any movement or propaganda for the literal interpretation of this absurd section is undertaken, the doctors of the old Hoosier state will rise up in their wrath and give the druggists a fight they will long remember. Indeed, we are advised that the medical societies in Indiana are not inactive and not asleep; that they are fully cognizant of the situation, and preparing to do battle, if that becomes necessary.

If it is the purpose of the pharmacists of Indiana to interfere with the practice of medicine in their state, it is our opinion—and not an humble one, either—that somebody has taken hold of a boomerang. In the long run, any effort on the part of any profession to legislate for another profession—be it that of law or medicine or theology—is going to get somebody into trouble.

And, so, all good friends of pharmacy, whether resident in Indiana or anywhere else, will join with us, we are sure, in the opinion that the leaders of the Indiana pharmaceutical profession, who are said to be back of this movement, must have been improperly quoted. We certainly do hope so, for nothing could be more unfortunate than to revive the old animosities between doctor and druggist. We had sincerely hoped that these were disappearing. We still entertain the hope that this is so.

Let us all bear in mind that the only way to increase the feeling of friendship between the two professions is for each side to give and each to take; each to be fair and just, each to be thoughtful of the interests of the other, each considerate of the circumstances under which the other man earns his bread.

However, if there is to be a fight in Indiana, we are with our good friends, the Indiana doctors. Forewarned is to be forearmed. The situation should be probed right now and a clear, definite understanding reached.

The physicians of Indiana, as well as of every other section of the country, want

to know exactly where they stand in this matter. We hope somebody will inform us of the exact status—tell us just how matters stand, plainly, succinctly, truthfully.

The pages of CLINICAL MEDICINE are open to any Indiana doctor who has positive information about this matter. Then, if there must be a fight, we are ready.

There is an idea abroad among moral people that they should make their neighbors good. One person I have to make good myself. But my duty to my neighbor is much more nearly expressed by saying that I have to make him happy, if I may.—Robert Louis Stevenson.

CHRONIC INTESTINAL STASIS: ETIOLOGY AND TREATMENT

Lane's discovery of the intestinal kink was received with notable enthusiasm. The surgeons had about exhausted the possibilities of appendicitis, ptosis, and decapsulation, and these seemed about ready to follow oophorectomy into the oblivion that comes swiftly when novelty fades. Lane opened up a new field for the men of the knife, and they were duly grateful. The opposition is forming, however; and this comes, not from the despoiled internists, but from the laboratory. The latest presentation from this side is the paper, in *The New York Medical Journal*, by Dr. Anthony Bassler.

After careful study of this article, we are inclined to think that the writer is of the type of men who are somewhat difficult to convince and present stumbling-blocks in the path of the enthusiast who takes all movement for progress and change for betterment.

Moreover, the laboratory is growing exacting, complicated, and tedious; and in direct ratio less willing to give that plain and decided opinion for which we of the bedside clinical persuasion have so longed. How we have yearned for something like positiveness to replace our ancient guessing; and how hopefully we have looked to the laboratory for that boon. But just see what Bassler demands as bases, so as to enable him to make an inductive—although, he hastens to add, not conclusive—picture of chronic intestinal stasis, to-wit:

1. Attacks of abdominal distress, generally epigastric or right iliac, not associated with food taking.
2. Local tenderness in the right ileum and the hepatic flexure.
3. Constipation, perhaps preceded by abdominal pain or alternated with diarrhea and mucous discharges.

4. Sense of gas distension in right abdomen, perhaps causing palpable cecum, with splashing there.

5. Symptoms of intestinal intoxication; malaise, lack of energy and endurance, headache, backache, anorexia, sallowness, muddy complexion, rings about eyes; armpits, groins and popliteals stained; malodorous breath, neurasthenic symptoms, abdominal and general; loss of weight or standstill, notwithstanding appropriate dieting.

6. Functional eye symptoms, disturbed reflexes, neurotic insomnia, heart-rate slow or fast, causeless urethral distress, coccygodynia; subjective pains in left hip, flank, and subscapular region.

7. Prolonged stoppage of bismuth at certain points in the intestinal canal—often fallacious, if taken alone.

8. Careful examination of stools and urine, under innumerable precautions, with showings taking half a column to describe. Determination of these latter data Bassler considers the most valuable method of diagnosing the condition under discussion; namely, chronic intestinal stasis.

All of which goes to show why medical practice can never be reduced to a mathematical basis; for, who is going to all this trouble and expense to determine whether a man needs a dose of salts? Medicine will always be a matter largely of swift intuition, pre-knowledge, guesswork if you will, with psychiatry back of most of the therapeutics.

Follows an exhaustive review of Lane's and Kellogg's theories, in which the very slender evidence in their favor is demonstrated and the unsatisfactory results of the operations are revealed. The lack of correspondence between the symptoms and the asserted lesions, the return of symptoms after the removal of the assumed cause, and especially the neglect of these observers to begin their investigations by taking normal subjects, are given in direct, logical, unanswerable terms.

The conclusion: "To me, intestinal stasis is a medical matter almost entirely. Surgical procedures for conditions that ensue as results or complications may be necessary in individual cases, but never the major surgical procedures of Lane for nonobstructive stasis or toxemia, his form of operation for disease in tissues remote from the abdomen, partial types of resections or anastomoses, being performed in the absence of marked disease or obstruction. From long neglect, many of these cases have local conditions requiring surgery, but there should be only such surgical procedures as have been known

for years, procedures necessary to remove badly diseased areas, not those of glorified abdominal plumbing in which the mortality is high, the results more liable to be transitory, negative or bad, rather than good, in which moral effect, medical treatments, and others deserve the credit rather than the enthusiasm of the surgeon or the form of operation done."

Finally:

"To substantiate the importance of the bacterial-food origins, we should begin the study of stasis by examining the stools of children and young adults. It is not only in the acute diarrheal disturbances of young children that this subject is important, but even more so in bacteriological changes afterward, causing the chronic infections. There is a normal bacteriological status in the intestinal canal of human beings, and it is surprising how uniform this is in a large number. Every case of intestinal toxemia shows this to be away from normal, and in practically every adult case the infection had existed for years—mostly from childhood.

"If we are right in our etiological and diagnostic beliefs, that diphtheria-bacilli in a sore throat mean diphtheria, typhoid-bacilli in stools and general system mean typhoid, pneumococcus in sputum means pneumonia, and tubercle-bacilli mean tuberculosis, and so on through the most valuable advances in medicine in all stages of its career since its beginning, then it is biologically important, on etiological, diagnostic, and therapeutic lines, that the intestinal infections must so be considered. My researches in the pathogenic types show this to be true, the organisms found being in the colon, the pseudodysenteric and true dysenteric forms, the aerogenes capsulatus, streptococcus faecalis, alpha and beta types of paratyphosus, the so-called "slimy bacillus," the proteus, alcaligenes, pyocyanus, butyricus, entericus, macerans, putreficus, subtilis, paratyphoid, and others that may be important in individual cases.

"It is upon the presence and activity of these organisms that the true cause of intestinal stasis is based, and the time must come when this fact will be generally recognized, even though this kind of work is difficult of quick understanding and application both in diagnosis and treatment."

WATCH THE LEGISLATURES

The situation in Indiana, referred to in a preceding editorial, should serve as a warning to physicians living in other states

where similar legislation is likely to be enacted. For several years back we have been advising our readers to watch the legislatures. We repeat that warning now.

Fortunately, only ten legislatures will be in session this winter. We learn from *The Medical World*, which has been doing valiant work for the doctor—work which every physician should appreciate at its full splendid value—that the legislatures of the following states will meet this year: Kentucky, Mississippi, Maryland, Virginia, New Jersey, New York, Rhode Island, South Carolina, Massachusetts, and Louisiana.

We advise every physician living in any one of these states to write his state senator and representative to send him copies of every bill introduced affecting, or likely to affect, the interests of the medical profession. These bills should be studied carefully, and if they are found dangerous or subversive of the rights of our profession, they should be fought with earnestness and vigor through the county and state medical organizations.

WHY I AM MAKING GOOD

I believe in my work.

I have prepared myself carefully for it, and am improving myself, every day, by study and observation.

I take several medical journals, read the new books, attend the medical meetings, and keep a careful record of my cases.

I try to be thorough, approaching every case as if it were a mathematical problem which can be solved only when I know the value of x and y .

I take no thing and no man merely "for granted"; "search farther" is my motto—and I am looking in out-of-the-way places and books constantly for things that will help me to help my people.

I do not sulk, knock, Welch or complain, but keep pleasant, keep smiling, trying to be, as well as seem to be, a friend to every man, woman, and child in my town.

I am neat in my personal appearance. My nails are never "in mourning," my teeth are always white, my hands always clean, and my clothing scrupulously neat.

I am ambitious. I am determined to do better work next year than this year, and to have a better and more lucrative practice sometime—perhaps in a better town.

I am square, and my people know it—but my life advertises this fact, not my words.

I am modest, but honestly anxious to know people and to have them know me,

and for that reason I am called "a good mixer." I have found that it pays to be friendly with folk, to get acquainted with them, not only because it brings me business, but also because it warms my heart and makes me a happier man.

Now you know why I am making good.

What a place to be in is an old library! It seems as though all the souls of all the writers that have bequeathed their labors to these Bodleians were reposing here as in some dormitory, or middle state. I seem to inhale learning, walking amid their foliage; and the odor of their old moth-scented coverings is fragrant as the first bloom of those scintillant apples which grew amid the happy orchard.—Charles Lamb.

VARIOUS VEGETABLE FEVER- REMEDIES COMPARED

In his new work, "American Therapeutics," just off the press, Ellingwood gives an excellent comparison of the applications of five fever-remedies, and this information is so interesting as to deserve of reproduction here, in substance, as follows:

Aconite.—Indicated at the onset of fevers, during sthenic fevers, and in small doses during protracted asthenic fevers; emphatically the child sedative, applicable in midlife, less prompt in age; in all acute fevers and inflammations, with rise of temperature; heart strong and rapid, pulse quick, sharp, hard, in asthenia soft, small, feeble, but regular, very small doses; fever always present in acute—heart and pulse must guide in chronic; skin hot and dry, capillary circulation actively engorged, eyes bright; mouth dry and parched, tongue pale, soft, white coat, moist or dry and harsh, with brown stripe; secretions may be abruptly suppressed; general distress and headache, local pain at seat of inflammation.

Gelsemium.—Sthenic cases, with nervous irritation, spasm threatening, or acute cerebral engorgement, neuralgic pains; excellent in infancy, full doses for strong adults, less frequently for aged; acute forms of cerebral engorgement, nervous irritation and excitability; heart strong, irritable, violent action, increased muscular power, exalted nerve force in heart disease, never in feeble heart; fever usual, of nervous type; skin dry and hot usually, face flushed, bright red, eyes bright, pupils contracted; red tongue, dry or moist, in protracted nerve irritation dry and dark red; secretions usually suppressed; severe headache, with extreme restlessness, local pain of nervous origin, and acute neuralgias.

Veratrum.—Only in sthenic cases and in convulsions, or threatened convulsions with rapid heart action; for strong adults and women at childbirth, hard to adapt to infants, seldom for aged; threatened head engorgements or convulsions; heart strong and rapid, pulse full, large, hard, or small, hard and very fast, never in feeble heart; fever usual, heart-action rather than temperature the guide; skin may be cool, bright red or dull red; tongue dry, red stripe in middle; skin and kidneys usually free in action, except in uremia; pain dependent on cause, may be local, may be bursting headache as in puerperal convulsions.

Bryonia. Applicable in either sthenia or asthenia; any age, weak or strong, infants and aged; serous or synovial inflammations, or of organs covered by serosa, as pulmonary and intestinal structures; heart may be weak or strong, pulse quick; is not heart depressant in medicinal doses; fever present; skin usually hot, moist or dry; red spot on one or both cheeks; tongue dry, usually coated, membranes dark; secretions usually deficient; quick shooting, darting pains; local soreness, tenderness on pressure; general muscular aching.

Rhus Tox.—In sthenia or more frequently asthenia; all ages by adjustment of doses and study of indications; local inflammations, involving skin, with redness, circumscribed tenderness, heat or pain; typhoid conditions or low protracted fevers; quick pulse, rapid, usually soft, feeble, compressible, or may be hard or wiry; fever present; skin usually very hot, especially in circumscribed area, which is bright-red; membranes dark, tongue dark, pointed, red tip and edges, elongated papillæ; secretions usually suppressed; pain in inflamed area, general muscular aching.

We have learned to associate these vasorelaxants with all conditions showing vascular tension, or any tendency to vasospasm; hence, with fevers and neuralgias, where they are distinctly anodyne. Very often the nervous tension that prevents sleep will give way to a few doses of aconitine, and refreshing slumber will follow without resort to any hypnotic, much less to the perils of opiates. We have yet to meet the doctor who has become familiar with aconitine and looks on it as an unsafe remedy, even for infants. Given in the minute doses every quarter to half hour until effect, it is the ideal of a safe and manageable febrifuge.

Gelseminine is a remedy that grows on one the more it is used. We have largely dis-

continued the use of morphine since learning how frequently this relaxant substitutes it, with better effect, since it never checks the secretions. It is distinctly anodyne apart from its vasorelaxation, with selective sedation in the pains of the genitourinary tract.

Veratrine is a reliance in sthenic inflammations, and whenever fevers are associated with defective elimination. We look on it as of great value in such toxemias as eclampsia and uremia; and we like its action in arteriosclerosis with high vascular tension. When we hear a doctor talk of its "dangerous" character, we feel the same pitying compassion as when the old darky asserted that "the sun do move." Yes, rather a sense of indignation that a man who should, and could, so easily learn the truth, should not take the trouble to do so. All one need remember is, to give veratrine in small frequent doses, and stop when there is a sense of warmth in the stomach. Is that so hard?

Bryonin is chiefly given for pleurisy and dropsies, as a diuretic. Its place is less firmly established, but many of our readers are well able to discuss its merits.

Rhus has long been a favorite and has been employed in rheumatism, especially when the muscles were involved, in erysipelas, low typhoid states, and the exanthemata with hyperacute involvement of the skin. It is an odd remedy, and does not seem to affect all persons alike.

This group of five remedies would make an excellent subject for clinical investigation. Suppose some of our readers put Ellingwood's indications to a fair and impartial test, neither seeking to support or contradict him, but simply to ascertain the truth—and let us know the results.

THE TREATMENT OF FLATULENCE

We find a discussion of the treatment of flatulence in the September 4 number of *The New York Medical Journal* (p. 518), the contributors being Newman, Casale, Eichhorn, Sutton, and Martin.

In *gastric flatulence*, Newman says, hypodermic injections of 1-10 grain apomorphine usually will give instant relief—by emptying the stomach, of course. He finds Hoffmann's anodyne, given in dram-doses every fifteen minutes, the best carminative. Spirit of camphor also is useful. In such cases of gastric atony, Casale restricts the diet to milk, to be given every two hours, and kept

up for a week or more, until the symptoms disappear. No fluid should be taken with meals. To combat fermentation, when there is insufficient acid, he gives dilute hydrochloric acid, 20 minimis in half a glass of water, to be sipped through a straw during the meal. If there is heartburn, sodium bicarbonate or calcined magnesia is advised.

This writer's experience is, that relief ordinarily is secured by means of intestinal antiseptics (the sulphocarbolates), with some carminative, such as menthol. When there is gastric atony, capsicum and nux vomica are very effective.

In *intestinal flatulence*, Newman finds camphor, asafetida, and pancreatin beneficial, while, he declares, in the flatulent colic of old persons and others, capsicum is the remedy. This not only acts as a carminative, but will prevent the development of gas. To remove the gas from the bowel, he orders an enema of castor-oil and sodium bicarbonate, and hot applications to the abdomen.

This writer's experience is that the addition of a few drops of oil of turpentine to the enema will make it more efficient. Of course, the entire upper intestinal canal should be cleaned out with calomel and a saline laxative.

In cases of *intestinal atony*, the very best remedy is physostigmine, which may be given hypodermically in cases of emergency. This is the remedy above all others for the flatulence caused by paresis of the bowels (paralytic ileus) following abdominal operations.

Flatulence is often, in fact, usually, associated with chronic *intestinal stasis*. The use of mineral oil, possibly administered in the form of a palatable emulsion and, given over a prolonged period, will relieve all cases not requiring surgical intervention.

In treating the *putrefactive forms* of flatulence, adds Martin, it is desirable to give, besides the other drugs, the Bulgarian lactic-acid bacillus, which is now available in dependable tablet form.

Another remedy that is excellent in intestinal flatulence, as also in gastric disorders, at all ages, marked by hyperacidity, is the so-called neutral cordial of the Eclectics.

Colic in children generally will yield to a warm enema, and a course of treatment with a mineral-oil laxative. Some good carminative may be used for the relief of pressing symptoms.

Isn't this topic of sufficient interest to deserve comment by the readers of CLINICAL MEDICINE? We are sure that many of our busy readers can find time for "just a line".

Leading Articles

The Present Pandemic Simulating Influenza

Its Etiology and Treatment

By J. FAVIL BIEHN, M. D., Chicago, Illinois

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SOME months ago, in various parts of the country, especially in the large centers of population, there set in an epidemic of an acute infection of the respiratory passages, clinically very similar to influenza—popularly referred to as grip. The disease is, unquestionably, contagious and air-borne; having none of the characteristics, now so well recognized, of a milk-borne infection.

The infectiousness of this disease is particularly great, usually the majority of individuals of a household, office or other establishment being attacked. So far as I am able to ascertain by personal observation, in several school-rooms, the number of those attacked in these groups ranged between 38 and 82 percent. Those suffering from chronic catarrhal conditions, especially chronic infections of the antrums, are first attacked, the more or less normal individuals not so affected usually contracting the disease somewhat later.

The incubation period in several instances that came to my notice was between twenty-four and forty-eight hours. No age is immune, while both sexes seem to be equally subjected to attack.

Review of Bacteriologic Findings

As to the etiology of this disease, it has not as yet been definitely settled what bacteria are involved. Still, most bacteriologists are agreed that, primarily, it seems to be a streptococcus-pyogenes and pneumococcus infection, these organisms—and practically no others—being constantly present during the acute stages; the influenza-bacillus being but very rarely found early in the attack, and even when it is found it is not present in sufficient numbers to be considered the causative element of the infection. Indeed, influenza-bacilli are not being encountered

with any greater frequency than they have been found in normal as well as diseased respiratory mucous membranes during the past four years. Unquestionably, therefore, the present disease is not influenza.

Many cases beginning as an acute rhinitis show, especially during the first few days, the anaerobic bacillus rhinitis of Tunnicliffe. This organism, however, tends to disappear by the fourth day, at which time the streptococcus pyogenes and the pneumococcus are the predominating bacteria.

So far as I have been able to determine by careful culture-methods, the streptococcus viridans is present in about 18 percent of the cases. As the disease progresses, various other bacteria appear, the staphylococcus albus, and occasionally staphylococcus aurusc, usually beginning to be seen on about the fourth day of the attack. The micrococcus catarrhalis is but infrequently present. However, in all cases in which the upper bronchi are affected, I have found the micrococcus pharyngis siccus. This latter organism produces a circular, firmly adhering, dry, crinkly colony, while the micrococcus catarrhalis is more frequently found on the tonsils, especially in individuals who have been afflicted with chronic tonsillitis.

Staphylococci and the streptococcus viridans seem to be the predominating organisms in the nasal cavity during the later stages. Throat cultures universally show some member of the bacillus-Friedlander group, especially during the latter stages of the disease. While these organisms are not seen in the smears and are rarely found in the cultures after a 24-hour incubation at 37° C., they, nevertheless, are the predominating organisms in these cultures when they are allowed to remain at room-temperature for four or five days. I have rarely encountered fusiform

bacilli and spirilla in typical cases of this epidemic disease.

Some Clinical Features Observed

In this epidemic, the patients present many of the characteristic symptoms that we are inclined to consider as typical of grip. However, certain especially noteworthy manifestations have been observed among which I may name nasal hemorrhage (which I have found to occur rather frequently), and an intense conjunctival hyperemia very similar to the so-called conjunctival influenza (popularly known as pinkeye). There also frequently is a marked edema of the forehead, especially over the frontal sinus. This is a characteristic I have not observed in any previous epidemic.

The tendency to occlusion of the sinuses—frontal, ethmoidal, sphenoidal—with resultant pressure-headaches or neuralgias, is another peculiarity, while especially frequent have been eustachian-tube closures, resulting in earache. Complications such as tonsillitis are less common than in preceding epidemics, the inflammation in the throat usually being peritonsillar and perilaryngeal. In very few cases, apparently, there occurred mastoiditis, brain abscess or severe purulent inflammations of the sinuses. In such cases in which mastoiditis does develop, usually a hemorrhagic, not purulent, exudate forms; this indicating that the condition is due to a streptococcus, the virulence of which is such that it tends to produce a spreading, erysipeloid, nonpurulent inflammation. Cardiac and articular involvement and complications have, so far in my experience, been very rare. There is, however, a marked increase in acute lobar pneumonias, due principally to the type II pneumococcus and the pneumococcus mucosus.

Action of the Bacterins

I have used bacterins in the treatment of 146 cases during this epidemic, and the results in many of them were nothing short of marvelous. Practically all of the patients—amounting to some 63 percent—who were seen during the first twenty-four hours and who received a single dose of 1-2 Cc. of pneumococcus-combined bacterin, each Cc. of which contained 50,000,000 each of pneumococcus type I and type II, and pneumococcus mucosus; 100,000,000 of streptococcus pyogenes; 50,000,000 of streptococcus viridans; and 100,000,000 each of staphylococcus albus and aureus (making a total of 500,000,000 killed bacteria), showed marked

relief within three days; while the cure was completed in three or four days after a second injection of 1 Cc., usually given on the third or fourth day after the initial one.

A few patients seen during the later stages, that is, after the fourth day of the attack, did not respond as readily. Not one, however, unless there were surgical complications, required more than four injections, given at three- or four-day intervals.

To the average practitioner, the dose just mentioned would seem to be very massive, especially as we have taught that bacterins are not to be given in acute infections. However, I have yet to see a case of anaphylaxis or any other really dangerous condition to develop as the result of a subcutaneous injection of bacterins. A personal experience, in which I took an enormous dose, may be worth recording here.

A Personal Experience

Notwithstanding the fact that I had immunized some eighty children, of whom only four contracted the disease, I did not immunize myself, and as a result acquired the disease, a slight chill occurring on the evening of Tuesday, December 14. However, I decided to let the disease go on, in order to be in position to make a careful bacteriologic examination.

On Wednesday, December 15, I took 1-2 Cc. of pneumococcus-combined bacterin, a total of 250,000,000 killed bacteria. There was little or no general reaction, so far as I was aware. Having taken a dose at 6:00 o'clock p. m., the reaction began at 12:00 p. m. There was some slight local reaction (redness, etc.), visible for thirty-six hours. Four days later, Sunday evening, December 19, I took 1 Cc., 500,000,000 killed bacteria. Again, practically no general reaction.

On Friday morning, December 24, five days after the second injection, at 7:30 a. m., I injected into the abdominal region 1-2 Cc. of a concentrated stock pneumococcus-combined bacterin (approximately 26,000,000,000 killed organisms) and went about my work in the laboratory as usual. A slight headache (frontal) set in at about 1:00 p. m., which from then on became somewhat more severe, although at no time was it unbearable. There was observed a feeling of malaise at 2:00 p. m., and also some local reaction (swelling, tenderness, hyperemia), which gradually increased during the next eight hours. There was some prostration, most marked about 3:30 p. m., at which time standing was somewhat difficult, although I remained

at the laboratory working at my desk from then until 5 o'clock, when I went home unassisted.

Coming home, I found that I had very little appetite, but nevertheless ate a fair meal. Upon lying down, however, there came on some dyspnea, and I experienced alternating flashes of heat and cold, while, also, a moderate but not profuse perspiration set in. By 11:30 o'clock, some improvement had occurred, so much so, in fact, that I was able to assist in trimming the Christmas tree. At 1:00 a. m., I finally went to bed for the night, but was unable to sleep, this insomnia persisting until some time between 5 and 6 o'clock in the morning.

It was not until this time that a completely recumbent position was comfortable. Then followed eight hours of restful sleep, after which I arose, and after a hot bath seemed much refreshed, although I felt tired the entire day—Saturday, December 25. However, the entire reaction had passed off by next day (Sunday) to such an extent that I went out in the evening, apparently having suffered no untoward effects.

All symptoms of the infection had disappeared by Monday morning, and I went, as usual, to the laboratory. A hard day's work in the laboratory on Monday, however, being on my feet most of the time, and the edge of a laboratory-table coming in contact with the site of inoculation, resulted in another local reaction, almost as severe as the original one, but it was accompanied by only slight evidences of a general reaction.

At no time did I experience a chill, although the temperature dropped 1.8 degrees eight hours after the injection and rose 0.6 degree fourteen hours after the injection; while twenty-four hours after the injection it again was normal.

From the eighth to the tenth hour after the injection, there occurred a profuse nasal discharge of a thin, serosanguinous character, and considerable mucus was raised, as a result of constant coughing, due to bronchial irritation, a part of the symptom complex of the reaction—the sputum at first being tenacious, transparent, and colorless, except for the admixture of some dust particles from the respiratory mucous membrane; later, it became much more fluid and of a yellowish-green tinge.

Although I have given doses of staphylococci as high as 10,000,000,000, this is the largest dose of bacterins I have ever given, and I have yet to see a distinct chill follow the subcutaneous injection of bacterins, al-

though I have seen it occur as the result of an intravenous injection. This, in my case, also, was the severest reaction I have ever witnessed, and I do not think that, because it was personal, I am biased.

Concomitant Treatment

I do not wish it to be understood that the bacterins were the only treatment these patients received. In each case, a cathartic, preferably castor-oil, was given; a light, though substantial, diet, including milk or buttermilk, was ordered; locally, iodine in some form, usually calx iodata, in combination with small doses of iodide of potassium.

If the headache was severe and there was little or no general reaction, 5 grains of acetanilid practically always controlled it. For the muscular soreness so characteristic of most of these cases, I prescribed macrotoïd, bryonin, and rhusoid, one granule of each, every two hours until relief, although some of the patients seemed to do better on quinine, of which I gave the bisulphate, 10 grains morning and night. Acetanilid usually controlled the earache, but this was always supplemented by local treatment; adrenalin and a mild alkaline antiseptic containing menthol as a spray or, preferably, a douche, and given as warm as the patient could comfortably bear. Nasal hemorrhage always yielded to emetine hydrochloride hypodermically, and in no case was there recurrence following its use.

The patient, if possible, had to spend twenty-four or forty-eight hours in bed, in a room not over 70 degrees temperature, and in which the humidity was maintained as near the saturation-point as possible; the excessive moisture tending to liquefy secretion and allay the irritation of the respiratory mucous membranes. As many patients as possible received iron citrate, hypodermically, during convalescence, a dose being given every other day for four doses. This I believe is good practice, owing to the fact that we have infection caused by an hemolytic organ.

In no case have I seen an acute nephritis, although the urine was always carefully examined. Only two patients developed a cystitis, caused by streptococci and colanbacilli; but this rarely lasted more than forty-eight hours. No specific treatment was given for this, aside from the large quantities of water and citrus fruits, which were ordered for all as a routine measure.

Those patients who took the hot nasal douches or inhaled the steam from a boiling

kettle in which either menthol or benzoin had been placed with the water, apparently derived the greatest amount of benefit therefrom.

Practically every patient who did not present some chronic infection of the antrums recovered completely within ten days; over 60 percent of them in five days. All those showing abnormalities of the turbinates or septum or any other anatomical lesion of the respiratory passages were immediately referred to a nose-and-throat specialist. It is a waste of time and energy to attempt to produce a permanent and lasting cure in such individuals without correcting their anatomical deformities.

In no case have I deemed it necessary to employ autogenous bacterins, as they are generally defined; however, if some other organism, such as the micrococcus pharyngis siccus or micrococcus catarrhalis or a non-

hemolytic streptococcus was found to be present in the cultures, either an autogenous made from this particular organism or a corresponding stock bacterin was added to the pneumococcus-combined bacterin.

A parallel series of cases, 12 in number, for which autogenous bacterins were prepared in each instance, did not recover any more rapidly in the hands of any of my confreres than did my patients under stock bacterins. Of course, it must be remembered that the cultures from which the pneumococcus-combined stock bacterin was prepared were, many of them, isolated from patients in this epidemic.

Children under ten years of age received one-half the adult dose. As a prophylactic I gave 250,000,000; four days later, 500,000,000; and five days later, 1,000,000,000 Pneumococcus combined.

Chronic Articular Rheumatism and Rheumatoid Arthritis

Their Causes and Treatment

By BEVERLEY ROBINSON, M. D., New York City

IN THE fifth volume of Osler and McCrae's "Modern Medicine" (1915), in the article on arthritis deformans, it is stated by Doctor McCrae, who wrote it, that "chronic rheumatism" is a misnomer; that this term should be abandoned and the designation "chronic arthritis" be substituted for it—in this way assigning no definite cause for that diseased condition of the joints, but simply stating the fact.

It is denied by that author, so far as his observation goes, that chronic rheumatism ever follows an acute attack of rheumatism (p. 897). Further, the identity of this affection is much questioned. As a term, it is misleading, and the word "rheumatism," if used at all, is only acceptable for rheumatic fever.

With this opinion of McCrae I am not in complete accord. I acknowledge freely that many joint conditions, chronic in character, have an origin entirely different from that of rheumatism. In some instances, the diagnosis is soon accurately made and the cause of the arthritis shown. In some others, however, and especially among older persons, we should still assign rheumatism as the cause of the joint disease. We may not be able precisely to determine what the efficient, primary cause has been in the individual case, but we

should not give up the name entirely for cases in which the symptoms are distinctly marked, even though the infection, if infection it be, has not as yet been absolutely determined.

Of course, if we had a thoroughly reliable touchstone in treatment, we might be greatly helped; but we have not. The nearest approximation to this, in my opinion, is, medication with salicin, in large and frequent doses. When this remedy is manifestly useful in relieving pain and in helping partly the local disablement, I incline strongly to the belief that the condition is rheumatic in nature. When, on the contrary, salicin, properly given, affords no relief, even temporary, I consider its rheumatic nature very doubtful; and usually the direct cause of the disease will be established later.

It is evident how important it becomes to treat all these rheumatic cases very early when the joints are implicated in an insidious way, as they often are. If we permit the poison—whatever it be—to get a hold in the system before it's being effectively combated, we must make up our minds that we shall not be able to obtain any thoroughly curative effect. For, already the tissues about the joints have become thickened, contracted or atrophied, and time alone, with persistence

in the use of remedial agents, especially local ones, and suitable surroundings for the general health, can bring about desirable results; that is to say, a measure of comfort and improvement. Complete cure may result in a few instances even then, if the case be taken hold of vigorously and managed carefully and fully. If it has been allowed to progress without such treatment, however, we may not hope for more than amelioration, at best.

Principles of Medical Management

As regards the medical management of chronic arthritis of the varieties now being considered, endeavor should first be made to get rid of the focus of infection so far as may be. Then we should devote ourselves to the general management of the case and also to lessen the local pain or disablement of the joints affected.

Rest, in due amount, should always be carefully considered; and whenever there is an acute exacerbation locally, as evidenced by increased pain or stiffness, and, perhaps, general malaise and some rise of temperature, it should be firmly insisted upon for one day or longer. The bed is the place for these patients, at least for a while.

A little later, massage and passive, or possibly active, movements should be associated with the complete rest in bed. Then, a little walking, with or without support of an individual or crutches or a cane, should be attempted, and the length and duration of the walk progressively increased from day to day. The amount of active movements, either with or without massage, when in bed, should depend upon the personal response or reaction of the patient. In a similar way, it should be our guide when the patient is up and around, more or less, during the day. If active movements in bed or walking around the room or out of doors notably increase pain and stiffness of the joints, and these persist rather than disappear in part after some hours of complete rest, then we should lessen the amount of these exercises for a few days.

The general nutrition should be carefully attended to, and the effort be made constantly to strengthen and improve it by every restorative measure.

Of course, an abundant supply of sunlight and fresh pure air is essential; while, above all, an air of optimism, according to Billings, should surround the patient at all times. Altogether too prone are they to become discouraged under the obstinacy of their ailment, hence, change from one medical

adviser to another is frequent, despite even the best of care and greatest tact on the part of their physician and the nurse.

Little by little, with unrelaxed efforts, improvement, generally and locally, will follow. But, on the other hand, if there is any letup of treatment in any particular, a painful relapse is liable to occur. These relapses are often very obstinate, and increasingly so.

Role of the Vaccines

Autogenous vaccines, made up from the tissues and exudates of the focus of infection, have been of value. Numerous observations by several competent and reliable observers prove it. However, the quantity employed should be moderate, at least in the beginning of this treatment, and until the special idiosyncracy of the patient is ascertained. Otherwise, we are liable to have not a few unpleasant sequels—locally and generally. Moreover, in not a few instances, we find that we obtain quite as much success with a minimum dosage, eventually, as we do by introducing into the economy large or increasing doses.

Personally, I have but very limited faith in the curative effects of the stock vaccines; for, they impress me rather as a sort of hit-or-miss procedure, one not based upon what seems to be a rational conception of treatment. And, yet, there are now on record numerous instances, fortified by accurate reports from physicians who stand deservedly high in the profession, that point to very beneficial and enduring results at times, as obtained from the judicious and repeated use of these agents. Especially is this true of multiple vaccines containing a certain proportion of the derivative of the dead diplococcus microbe, to which Paine and Poynton have attributed such great importance in the causation of rheumatism.

Unfortunately, in many of these cases, other medical treatment has been employed at the same time, besides the vaccine, so that it is difficult to appreciate accurately to which of two agents we should ascribe the improvement in the patient's condition. On the other hand, according to the report of cases treated by Dr. A. A. Stafford,¹ this assertion does not apply; for, the good effects obtained by him were wholly due to the vaccine employed, since no other remedy was administered at the same time, except what was surely of no importance in the great amelioration of the patient effected in a very brief period.

¹*Southern California Practitioner*, Sept. 1914, p. 290.

It must be added, however, that Doctor Stafford's cases were usually acute rheumatic ones. Also, it is worthy of remark that most authorities have had better results from vaccines when employed for quite a length of time in cases of chronic arthritis of the nature of chronic rheumatism or of rheumatoid arthritis than in acute forms.

Insistence should ever be made upon the great importance of the general good management of the patient. Also, we should get rid, if possible, of a present and continuously acting source of infection and poisoning of the whole system. Without attention to, and the remedial treatment of, such focus, the vaccines, it seems to me, would only in relatively few instances have any marked beneficial effects; while, surely, these would not endure. To believe otherwise, is opposed to rational views bearing upon the judicious treatment of the diseases under consideration.

The late experiments of Dr. David John Davis,¹ of Chicago, on rabbits, designed to show the effects of sodium salicylate in various types of arthritis, do not substantiate what we know, clinically, about its action in acute articular rheumatism. They do show, however, that, as we have believed for some time, in forms of arthritis other than the rheumatic, the salicylate has very little, if any, protective or remedial value.

Chronic Articular Rheumatism and Rheumatoid Arthritis

As for rheumatoid arthritis, particularly, R. Pemberton² insists upon the value of proper diet, gradually increased, and, little by little, being approximated to about the same as we eat when in perfect health.

Whenever the causal source of the disease is found, it should be removed, if possible. In many instances, however, it cannot be discovered, and then the general line of treatment must continue. Even then we may obtain excellent results. Doctor Pemberton does not consider the disease as due to "intestinal putrefaction," and believes that a moderate protein diet is permissible; but neither that diet nor a diet of carbohydrates should be in excess.

In general, the treatment of chronic articular rheumatism and of rheumatoid arthritis does not differ essentially. The descriptions of them given by the authors so frequently merge into one another that we might readily take either one as our guide.

In the beginning of these two diseases,

it is quite impossible to separate them. They are both very insidious. The acute exacerbations repeat themselves quite frequently, with increased local pain and swelling—and perhaps a slight rise of temperature. The symptoms are not unlike, and rapid changes of temperature and exposure to cold and damp aggravate both diseases.

At a later stage, they frequently may be differentiated and with more or less certainty, depending upon the deformity of the joints affected and the greater disablement which usually results from rheumatoid arthritis.

We never have, as we know, the bony outgrowths the Heberden's nodes—in chronic articular rheumatism. In the latter disease, we are more likely to have a valvular cardiac affection, which may be attributable to a previous acute rheumatic febrile attack, or it may have developed little by little and without any specific assignable cause being apparent. It is true that chronic articular rheumatism is seen more frequently in hospitals than it is in private practice. It is especially found among day-laborers, cooks, policemen, stokers, individuals whose daily work exposes them frequently to wet, rain, and draughts when overheated and when tired.

Rheumatoid arthritis, in its chronic, advanced form, is more frequently encountered among the well-to-do and those who are often people of very moderate habits. Indeed, it is a mistake to assume that it is in any way an evidence of high living or over-indulgence in rich food or wines. There is one exception which should be noted in regard to the causation of these diseases. Among women who have had several children, who have been burdened with household cares and those who suffer from uterine disturbances, rheumatoid arthritis may be found equally among the poor and the rich.

Rational Treatment

From the preceding observations, we should derive our best indications for rational treatment.

No form of dieting that is too careful or particular is, as a rule, advisable. No cutting off absolutely from all alcoholic stimulants is, I believe, desirable. The idea that chronic articular rheumatism or rheumatoid arthritis is improved by great abstinence in food or drink is not infrequently a great error in practice.

To be successful, such patients need building up in every way possible. This does not mean, of course, that their digestive processes

should be overtaxed, nor does it mean that, when a patient has a distaste for any particular food or drink, this food or drink should be insisted upon because of some probably false theory that has been utilized to further wrong judgment. Personal idiosyncracy must always be allowed for.

In addition, it should be noticed that people's constitutions change, in a measure, from year to year and without our being able to explain why it is so. I have known, for example, those who found sweets very grateful to the palate during months and years, almost suddenly and apparently with nothing to account for the change, to acquire a thorough distaste for them.

Today, we are all inclined to seek for some distinct focus in the throat, nose, mouth, ears, appendix, and so on, as the direct efficient cause of an outbreak or aggravation of chronic rheumatism or rheumatoid arthritis, and to this and to the getting rid of it effectively, if possible, I have already referred more than once.

As to Dyscrasias

On the other hand, however, we should recognize now, that there is such a thing as an arthritic diathesis, and it is clearly distinguishable in some individuals and in some families. When such a constitutional dyscrasia exists, a mere nothing—the slightest change in one's habits or surroundings, or a very moderate exposure to chill, dampness, rain—will bring on a relatively acute attack or, surely, increase for a time the local stiffness and disablement of the joints. All patients having chronic articular troubles of this sort are better off, as a rule, in a moderately warm, dry, inland location than they are when the contrary surrounding conditions prevail.

For this reason, individuals living in Boston, or in New York particularly, should remove in the late autumn or in winter and early spring to localities like the pine belts of South Carolina and Georgia. During summer, they are nowhere so well off as near sulphur springs, like Sharon or Richfield Springs, New York, or the White Sulphur Springs of West Virginia.

Local Treatments

In the way of local treatment, there is nothing that equals daily massage combined with passive and active movements. But, too much emphasis cannot be placed upon the importance of the proper selection of a skilled, judicious masseur or masseuse. Moreover, the massage and passive and active move-

ments should be practiced systematically, and daily at least for several days or weeks. Later, the intervals of this treatment may be lengthened. This is true particularly as soon as the patient is able to walk a short distance without aid.

If too much or too severe manipulation of the joints be employed, quite as great harm can be done, even in a brief period, as would result from prolonged inactivity; and, as a result, we have greater stiffness and disability of the joints.

The best masscurs very rarely use any emollient or stimulating application, but depend entirely upon the use of their bare hands. In some instances, however, I am quite confident that massage with a combined stimulating and soothing liniment, such as compound soap liniment or Stokes's liniment, has helped to allay pains and to increase the pliability of the joints. At present, I am inclined to vaunt highly the decided and satisfactory results obtained from the frequent use of mutton suet, slightly benzoated, to neutralize its unpleasant odor. It should be kept in mind always, in making use frequently of liniments which cause redness or local irritation, that we are thus deprived of the application of massage treatment for the while. This is the reason why I have given up, in chronic affections of the joints, the local use of oil of turpentine, oil of gaultheria, menthol, ammonia, and chloroform.

Occasionally employed, and especially if there be an acute attack and massage is not desirable on account of the increased pain occasioned by it (usually because of ignorance on the part of the manutherapist), stimulating liniments may relieve pain in the joints for a while. This is true simply when they are applied locally on lint or gauze and evaporation is prevented by, say, a covering of oilsilk or thin rubber tissue.

What applies to liniments may also be stated with regard to repeated local applications of tincture of iodine to the joints. It may soon, when applied frequently, cause considerable local irritation of the skin. Pursued excessively, or if a strong tincture is used, we may produce blistering. So may we get blistering from oil of turpentine, if evaporation is prevented by an impermeable covering.

Now and then blistering is desirable, particularly where massage treatment cannot be had. If this method of treatment be employed, we should, preferably, recur to the oldfashioned treatment of a succession of

small fly-blister near and around the joint, not immediately over it. Sprinkling the blister-plaster with spirit of camphor before applying and allowing the alcohol to evaporate will prevent the cantharides from irritating the urinary organs.

The compound tincture of iodine and the iodine-ointment are now and then preferable to the simple tincture of iodine. They contain a proportionately smaller amount of iodine; and the iodide of potassium in the former, in considerable amount, and the lard in the latter, promote the resolvent effects. Moreover, they can be applied more frequently without causing undue irritation—the ointment with gentle rubbing. With the late Doctor Sayre, of New York—so famous as an orthopedic surgeon—iodine ointment was a favorite and often employed by him.

These facts, no doubt, are familiar knowledge to many. Nevertheless, as they are all-important for success in treatment, they should be insisted upon for inexperienced practitioners.

Special Treatments

Massage, as described, may often be associated, with very great advantage, with the use of one or other form of electricity. Whenever pain in the joints has been notably increased by massage or forced stretching of the ligaments or of muscles around or near the joints, this can be rapidly suppressed by the use of the faradic current.

In some instances, there is great benefit to be derived from the use of superheated dry air; but, unfortunately, outside of large cities it is very difficult to obtain proper facilities for its use. Moreover, even in a city, as in New York, where very excellent apparatus and skilled attendance can be had, it involves treatment outside of one's house. Of course, there may be a few rare exceptions, where an installation has been made in the home, but this can only be attained with much expense for apparatus and skilled treatment.

The radiant electrical-light and heat treatment has in its favor the relative ease, as compared with the ordinary treatment with superheated dry air, of its adoption wherever there may be found a sufficient electrical plant.

The Use of Radium

The last expression of science in these cases is, the employment of radium-therapy internally, by intravenous or intramuscular injection of solutions of radium. To what

degree, if any, such treatment can have any curative effect upon the primary cause of the disease is as yet unknown. The great influence of radioactive substances supposed to be existent in certain mineral-spring waters, and which seemingly would explain their beneficial local action, is even at present a matter which may be questioned. To the use of these waters in baths or taken internally, may also be attributed a marked beneficial effect upon the constituents of the blood or upon the functions of the blood-forming organs.

In all these cases, I have learned to have great faith in drugs, notably in the glycerophosphates or hypophosphites of lime and soda and in Blaud's pill mass in powder form. As an immense aid to nutrition in some of these instances, nothing equals or takes the place of good codliver-oil. It may be taken plain, mixed with malt extract, or combined with the hypophosphites, as best suits the individual. No amount of good cream or butter will supply its deficiency.

I do not believe much in the utility of iodide of potassium, given internally. It is very prone to upset the stomach, and its helpful effects, so far as the joints are concerned, are not evident, as a rule. If the iodides be given at all, I much prefer the syrup of hydriodic acid to any other form, on account of its effectiveness and assimilability.

In these and the foregoing statements, I have tried to formulate certain rules that are essential to success. When all these means have been tried with only very partial improvement, we may, in a few instances, obtain unexpected good results, occasionally, from mechanical apparatus or from operative surgery. But, we cannot urge too strongly the great need in just such cases of being ultraconservative. From mud- or peat-baths or salt-baths, I have sometimes had pleasant, if not enduring, effects.¹

The clothing must always be carefully attended to, and wool or silk undergarments are a necessity. Sleeping between blankets is often grateful and desirable. To those who suffer from cold feet at night, long wool or canton-flannel socks or leggings are a great comfort during the cold months of the year.

This article is suggestive rather than exhaustive, and, as the record of personal experience, I trust may be acceptable to many.

¹The best artificial baths are Pennes' baths, much used abroad.

The Prostate Gland: Its Diseases and Disorders

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide" and of "The American Journal of Urology and Sexology," author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhea and Its Complications"; "Never-Told Tales," etc.

EDITORIAL NOTE.—This is the second of the series of papers upon diseases of the prostate gland promised us by Doctor Robinson. It will be continued for several months. Our readers have a treat in store for them.

Loss of Libido

CASE 7. It is remarkable how, apparently, the same pathologic condition may produce diametrically opposite results. In one of the cases, previously described, we have seen how irritation of the prostate gland may produce excessive libido. The latter may be fictitious or artificial, but it is there, and the patient's actions are, to all intents and purposes, the same as if he suffered from a genuine powerful libido. Just so we may have diminished libido or even complete loss of libido from an abnormal prostate gland. This diminished libido may follow and be the result of a previously existing and excessive libido. As we know, all hyperfunctioning is usually followed by hypo-functioning, and it stands to reason that excessive libido, when it leads to excessive sexual indulgence, may result in a lack of libido. However, in some cases, this lack of libido seems to be independent of any previous excessive libido; it is apparently the direct result of an irritable or pathologic process.

Before we go any further, it will be well to ask the reader to bear in mind that by "libido" we merely mean desire for sexual intercourse, and not sexual power. There is a good deal of confusion in the mind of the average physician regarding the various phases of the sexual act, and the words "libido," as well as "sexual impotence," are used in a rather confusing, vague manner.

Several elements are necessary, in the male, for the proper and satisfactory performance of the sexual function. First, libido. There must be a strong or at least fairly strong desire for the opposite sex. Second, erection. For the proper performance of the act, normal erection is necessary; and not only must the erection be of a certain degree, but it must not be too slow in coming, while it must last a certain length of time. Third, ejaculation. The ejaculation must not be premature, otherwise there is little satisfac-

tion to the man and still less satisfaction to the woman. Fourth, voluptuousness. There must be a certain pleasurable sensation, which varies in different individuals, during the act of ejaculation, the acme of the act, which we call the orgasm. There is still another feature, fertility. The semen must be capable of impregnating the ovum; but this does not belong to the sexual act proper. Interference with any of the four elements enumerated above renders the act unsatisfactory, and, if the second and third element are abnormal, sexual impotence of various degrees is the result.

Ordinarily speaking, then, we apply the term "sexual impotence" to weak erections or to complete lack of erections, and to premature ejaculation. The lack of the first and fourth factors, that is, lack of libido or lack of voluptuousness, or pleasureable sensation during the orgasm, by interfering with the act makes the act unsatisfactory, but does not constitute impotence.

We have seen before that a diseased prostate gland may produce premature ejaculations and increased libido, and in the case which we are about to report briefly we shall touch upon diminished libido as a result of an abnormal prostate gland.

A. A., age thirty-four, married six years, had gonorrhea fifteen years ago, of which he was completely cured. The urine was free from the slightest traces of shreds or mucus, in fact, it was crystal-clear. The urethral mucous membrane was perfectly normal, and the fact that he had been married six years, indulging in normal sexual relations without any harm resulting to his wife, as well as that he had two perfectly healthy children, is pretty positive proof that his statement, that he was completely cured of his gonorrhea, is correct. Up to six months ago, he had absolutely nothing to complain of. Then he became conscious that his libido was becoming diminished rather suddenly, that he could go for a month without experiencing

any desire, and that, when he did indulge, there was no pleasure in the act, although the ejaculation was not premature.

An examination revealed an enlarged, very sensitive prostate gland, excruciatingly sensitive in some spots. Gentle massage of the gland, with no other treatment whatever, brought about a normal condition in less than three months. He is now in as normal condition as he ever was.

Tremor of Hands

Case 8. This patient presented tremor of the hands, which was beginning to become more marked during the past three months. As he was doing a great deal of writing, being engaged in newspaper-work, that was considered to be the etiologic factor; but, reducing the writing to a minimum and giving up writing altogether for three weeks did not effect any improvement in his condition. He was also quite a smoker and another doctor considered this use of tobacco the etiological cause. The man could not give up smoking altogether, still, he reduced his daily amount to about one-third of what he used to smoke, without there following any improvement in his condition. He was also given hyoscine hydrobromide, in doses of 1-150 grain, gradually increased to 1-100 and then to 1-60 of a grain, but without experiencing any benefit. Also, he was indulging excessively in sexual intercourse, and then that was considered the etiological factor. It is possible that the latter was the primary factor; still, giving up sexual indulgence altogether did not produce any appreciable improvement.

Finally, an examination disclosed an enormously enlarged prostate gland, which was very sensitive. Massage plus rectal irrigations with a cold saline solution and instillations of silver nitrate into the posterior urethra brought about a complete cure. I might add that bromides given in rather large doses did not prove of the slightest value.

Cephalgia

Case 9. This patient, a man of fifty-five, complained of severe headaches following sexual intercourse or straining at stool, which latter was always followed by a discharge of some prostatic fluid. While the headache following defecation lasted only an hour or so, the headache following intercourse would last, sometimes, twenty-four or even forty-eight hours. Complete abstinence for three months, during which time the prostate gland was massaged twice a week, resulted in complete cure of the condition; and it has not

returned in two years. The patient had taken every coal-tar product on the market and every headache remedy prescribed by the ethical physician or advertised in the newspapers. Nobody took the trouble to examine his prostate.

The difference between one physician and another is really not so much a difference in knowledge as a difference in the care with which the etiology is elicited and the examination made. If physicians were only more careful to get the history of their cases, and if they spent more time in arriving at a diagnosis, they would not so often need to send their patient to a specialist.

Constipation

Case 10. It is not necessary to report one specific case, for, instead of one case, I could report hundreds of cases. Constipation as a result of an abnormal prostate gland, is a very common affection. Consciously or unconsciously the patient afflicted with a sensitive or enlarged prostate gland often refrains from emptying his bowels when he should, and the result of failing to attend to the calls of nature is constipation; then, if this patient suffered from constipation before, that constipation will be intensified and become more and more obstinate. It is not at all claimed that an abnormal prostate gland is one of the most frequent causes of constipation; nevertheless, it is frequent enough to be borne in mind in all obstinate cases, particularly when defecation is accompanied by straining.

In this connection, it should be borne in mind that in constipation in which an abnormal prostate gland is apparently one of the factors, all irritating cathartics, such as aloin, podophyllin, colocynth, and the like, are contraindicated, because they congest and irritate the lower bowel and also congest and irritate the prostate gland. Nor is phenolphthalein a very commendable cathartic. It does irritate the lower bowel, and, if repeated too frequently, it also irritates the kidneys. Among the best laxatives in such conditions is one that possesses merely lubricating properties, and the best substance for this purpose is a heavy mineral oil (liquid petrolatum).

To emphasize: In all cases of obstinate constipation in men, the prostate gland should be examined and, if found enlarged, congested or supersensitive, should be treated.

Irritability

Case 11. Just plain, simple irritability. I know of no condition, except cardiac disease,

which is so liable to cause irritability, crankiness or anger and dissatisfaction with everybody around as is a diseased prostate gland. Very many cases of irritability that are often ascribed to dyspepsia can, with more justice, be ascribed to some trouble in the prostate gland, and it is remarkable how a man who is a nuisance to himself, to his family, to his friends, to his customers, in short, to everybody around, may become perfectly amiable and easy to get along with if his abnormal prostate gland has been successfully treated and brought to a normal condition.

Sterility From Prostatic Disease

Case 12. That a diseased prostate gland may affect the libido, the power of erection, and the ejaculation, is well known, and we have referred to it in some of the cases described above. It is not so well known, however, that an abnormal prostate gland may in itself cause sterility. The following case is very instructive:

B. B., age thirty-four, married eight years, but his wife never was pregnant. The wife was at first subjected to some treatment, but the husband had the decency to confess that he thought that the fault probably was his. He had had two or three attacks of gonorrhea before his marriage, and, in one of the attacks he had a severe epididymitis. When he gave this history, the doctors who treated him thought they did not have to go any further. The diagnosis was sterility due to gonorrhreal epididymitis. Thereupon, there were prescribed for him hot baths, massage of the testicles (with and without ointments), and a lot of other things.

When the man came to me for examination, the first thing I ordered him to do was to bring some of his semen in a condom, and, to my great surprise, microscopical examination of this revealed numerous spermatozoa. Consequently, the sterility was not due to an occlusion of the lumina of the vasa deferentia. However, the spermatozoa were not motile or only very slightly so. An examination of the prostate gland and of the seminal vesicles instituted next revealed a considerable amount of mucopurulent secretion—and pus in the prostate gland and in the seminal vesicles naturally is capable of destroying or at least impairing the vitality of the spermatozoa.

Treatment was directed to the prostate gland and the seminal vesicles, and was continued until the secretion from both failed to show any pus and both organs became practically normal. Examination of

the semen undertaken at that time showed the spermatozoa normal in amount and of normal motility. Soon thereafter impregnation of the wife followed; but, for some reason, this first pregnancy resulted in a miscarriage at about three months. The second pregnancy, however, was perfectly normal and a perfectly normal boy was the result.

Frequent Urination

Case 13. The case I am about to mention once more illustrates the frequent and regrettable failure of many doctors to apply all the means at their disposal for a diagnosis.

This man complained of frequent urination during the day—every hour, sometimes every half hour—and of having to get up at night two or three times. While there was no pain, there was a certain disagreeable sensation, and even after urinating the bladder felt as if there were some urine in it; it never felt quite empty. The physician looked at the urine and, despite the fact that the urine was quite clear, he, without further examination, diagnosed cystitis and prescribed an alkaline diuretic mixture. The condition became only the worse, for the man had to urinate more often.

An examination showed that the prostate was greatly enlarged, congested, and quite painful. The man recollects that some two months previously he was sitting on a cold stone stoop and that the frequent urination had begun the following day. Treatment directed exclusively to the prostate gland improved the condition at once and brought about a cure in two or three weeks.

Hemospermia

Case 14. This patient became badly frightened, because he had observed that his semen was tinged with red as if it contained blood. While hemospermia is more generally due to inflamed seminal vesicles, it may also result from a badly congested prostate gland. This was the case in this instance. Rest, codeine suppositories, followed afterward by gentle massage, resulted in a cure.

Heat and Heaviness in the Legs

Case 15. When a man complains of the calves of his legs feeling hot and heavy, particularly in the afternoon, the prostate gland should, invariably, be examined, and in many instances this will be found to be the cause. Here also I will not refer to any case in particular, because I have treated hundreds of cases in which the patients had been rubbed and massaged and were even ordered to wear rubber stockings, but

all to no avail, but who were benefited at once by proper treatment of the prostate gland. It is remarkable how a diseased prostate gland will send radiations in all directions, up and down, not only affecting the body, but the psyche of the individual as well.

Injury From Improper Treatment of the Prostate Gland

Case 16. The case, or class of cases, to which I wish to refer here really does not belong to the category of diseases of the prostate gland, but nevertheless, must be mentioned; for, just as a diseased prostate gland will cause trouble, so a trauma of the same organ, when produced by improper or too violent prostatic massage, may be the cause of very great suffering.

Prostatic massage is one of our most valuable therapeutic measures; in the treatment of prostatic troubles it occupies the foremost place. Yet, like all other therapeutic measures, it must be applied judiciously, gently, and properly. If done brutally or violently, or when the gland is acutely inflamed, it is liable to do, and often does, an enormous amount of damage.

From the descriptions of patients who were subjected to prostatic massage by other physicians, I find that only too frequently massage is performed too forcibly, too vio-

lently, with the nails or tips of the fingers digging into the prostate gland. This must never be done—there must be only a flat stroking and pressing of the prostate gland, but no digging into it. I have seen a number of cases where the condition became immediately worse after prostatic massage, resulting in painful urination, in strangury, in slight hematuria, in severe dragging-down sensations, in pain in the legs, and, in some instances, in complete urinary retention lasting from sixteen to twenty hours.

It is well, therefore, to call attention at the very outset to the fact that prostatic massage is not an indifferent measure, and, while of extreme benefit if performed properly and where indicated, may cause great damage if performed improperly, too violently, at too frequent intervals, or when not indicated at all, as, for instance, in the acute stage of prostatitis.

There are, unfortunately, no short cuts to the treatment of any diseases. We must always exercise great judgment and discrimination, and particularly so in the treatment of genitourinary and sexual disorders.

Having given a few examples of disorders of prostatic origin, we shall, in the next article, begin with a systematic study of The Prostate Gland: Its Diseases and Disorders.

The Optimist—Does This Mean You?

By MILTON RUGGLES

Full-gifted with power to see and understand,
Product of ambition, noblest of the land,
Believing in the future—in the present, too—
This is the optimist—does this mean you?

Pure-hearted, with strength to fight and win,
Guided by a purpose—not what might have been,
Aiming at the greatest, nothing less will do—
This is the optimist—does this mean you?

Unmindful of the failures, looking straight ahead,
Outliving disappointment—profiting instead,
Rising above discouragement, beginning life anew,
This is the optimist—does this mean you?

Vaccine and Serum Therapy in Everyday Practice

I. Theory and Rationale of Vaccine Therapy

By W. C. WOLVERTON, M. D., Linton, North Dakota

EDITORIAL NOTE.—Many physicians have asked that somebody write for "Clinical Medicine" a series of articles on vaccine (or bacterin) therapy, beginning at the bottom and explaining all the details. This is "it" Doctor W olverton is an exceedingly busy general practitioner, and he writes with the problems of his own class plainly in his mind's eye. For this and many other good reasons I am sure you will like his articles.

FROM conversation with a large number of physicians with whom the writer is personally acquainted, as well as from reading many papers written by honest and well-meaning, but insufficiently informed, men, it seems to me that there exists much misapprehension concerning the bacterial vaccines and an unwarranted fear of possible deleterious action from their use.

The subjects of infection and of immunity are, admittedly, complicated, and it requires quite a large, highly technical vocabulary in order that one may intelligently peruse the literature amassed along these lines. The man on the firing line, however, has not the time to go so fully into the technicalities of the subject; and many of the men who were graduated before modern bacteriology was made a part of the curriculum of medical schools are dismayed at the complexity of the subject and dismiss the use of bacterial therapy with the well-known remark about the impossibility of teaching an old dog new tricks.

In the same way, many men hesitated about beginning to utilize the active principles of vegetable remedial agents, after having for so many years employed the galenical preparations; however, once they made a start along the new and eminently more satisfactory lines, they never turned back. And so with the new biological therapeutic agents; let an intelligent physician employ them rationally in a few properly selected cases, and he finds that he has added a set of new keen weapons to his therapeutic armamentarium.

I have made almost daily use of the bacterial vaccines, in a large general practice, for the past five years, and can truthfully say that, when I have administered them in accordance with therapeutic and bacteriologic indications and in conjunction with the proper active principles of drugs, the vaccines have seldom failed to give splendid results.

It is because of this thorough tryout of the vaccines in an extensive *general practice*

and because I do not regard the vaccines as a cureall, but rather as a therapeutic adjunct of great value when properly employed simultaneously with active medicinal agents, that I have been requested to write a series of papers, of which this is the first, dealing with the various phases of vaccine-and serum-therapy as it appeals to the *general practitioner*. And, since—as a matter of course—the general practitioners make up the great bulk of the medical profession, I shall endeavor to present the subject in as practical a form and as free from unnecessarily technical terms as possible.

Vaccines, Bacterins, Serums

Now, to begin with, the bacterial vaccines are, in the strict and proper meaning of the term vaccine, not vaccines at all. Vaccines proper are living pathogenic microorganisms the virulence of which for human beings has been attenuated in some one of a number of ways. Probably the best example of a true vaccine is seen in that which is employed to produce an immunity against smallpox. Then there was the notorious tubercle-vaccine, which was known as "Friedmann's serum," but which evidently was a true vaccine, as it was said to consist of a suspension of living tubercle-bacilli, the virulence of which for the human patient had been attenuated by their previously having been inoculated into a turtle. Still another true vaccine is that used in veterinary practice for the production of an active immunity against the disease known as blackleg.

As now generally understood, the "*bacterial vaccines*" are suspensions of *killed* pathogenic bacteria in sterile physiologic salt solution, to which usually is added a small percentage of phenol or trikresol as a preservative and to prevent contamination from without the container. A better name than vaccines for these preparations is *bacterins*, and this term will be adhered to in these papers.

An *immune serum*, or, as it is usually simply termed, a serum, is the blood-serum of an animal whose resistance against infection by

a given variety of pathogenic bacterium has been raised to as high a level as possible by subcutaneous or intravenous injections of dead or of living bacteria of the given variety, or of their toxins. These sera are commonly spoken of as "antitoxins," although they usually contain a number of antibodies other than antitoxin. The best-known examples of immune sera are those employed against diphtheria and tetanus.

One could not reasonably take up the study of the subject before us without saying at least a few words on the subject of *immunity*, by which we mean the specific resistance of an animal organism against invasion by pathogenic microorganisms (to all intents and purposes, bacteria).

Immunity

In the mind of the physician who observes while he works, there will, at times, arise the query, "Why is it that one individual as an infant contracts styes and eczema; as a child is subject to repeated attacks of furunculosis and paronychia; during adolescence, to severe acne; and, as an adult, to chronic eczema, pus infections of the tear-sac, and the like? Whereas, on the other hand, another individual is practically immune, throughout a long life, to all infections by the staphylococci?" The tissues of the former person appear to furnish an agreeable soil for the growth of the staphylococci, while those of the latter are totally unsuited to the microbial wants; but, as to the real, basic cause of this difference in immunity we are ignorant.

Now, the immunity of an organism may be either of the *active* or of the *passive* type.

Active immunity may be brought about (a) by the introduction into the animal organism of living pathogenic bacteria of a proper degree of virulence and in sufficient numbers to produce the pathologic phenomena that are designated as infection; following recovery from this infection (if the subject survive), there usually exists an immunity against a second attack of the same disease, said immunity persisting for a variable period of time; or (b) by inoculation, into healthy tissue, with *killed* pathogenic bacteria (bacterins, or bacterial vaccines). The latter method certainly is by far the more desirable, as no disease is produced thereby.

Passive immunity is of but short duration, and is brought about (in so far as it concerns the subject with which we are now dealing) by the injection (subcutaneous, intramuscular,

intravenous, subdural, and the like), of immune sera obtained from immunized animals.

The sera, since they produce only a transitory, *passive* immunity, have, of necessity, a very restricted use; while the bacterins, producing, as they do, a much more protracted, *active* immunity, have a much wider field of usefulness.

In short, we inject into a patient a bacterin, in order to create an *active* immunity; that is, we persuade him to produce his own antitoxin and other immune- or anti-bodies; the *sera* (or serums) we inject for the purpose of producing a quick, *passive* immunity.

The former—that is, the bacterins—are employed when it is safe to wait anywhere from a few hours to a number of days for their specific action to take place, as in the treatment of all chronic and also of various acute infections. The sera, on the other hand, are made use of whenever quick action is imperative, as in the case of diphtheria, tetanus, and cerebrospinal meningitis. Unfortunately, the really valuable sera, for all practical purposes, are limited to those last mentioned; the antistreptococcal and other sera frequently giving disappointing results or, in some instances, even being a menace to the patient's life—for reasons that will presently be explained.

Bacterin and Serum Are Not Synonymous

We should be careful not to confuse the terms serum on the one hand, and bacterin or vaccine, on the other. I have tried to make clear the difference between the two; and, certainly, the difference is sufficiently great. And, yet, I have often heard medical men—men otherwise well informed—speaking, in medical-society meetings, of, say, typhoid—"scrum" when they meant typhoid—"bacterin." Typhoid-serum has, practically, never been employed in this country, and but little in Europe. If a man does not know the difference between a bacterin and a serum, can he reasonably be expected to obtain satisfactory results from the administration of either of them?

Returning to the matter of immunity, this may be either local or general. A few years ago, I saw the following, to me, at that time, remarkable sequence of cases in the same family; although now, in the light of recent bacteriologic discoveries, the whole matter seems clear enough.

Mrs. F., a woman of about 40 years, had a very severe attack of facial erysipelas (which we now know is caused by the strepto-

coccus of Fehleisen). Her nephew, Karl M., a young carpenter, who was staying at the same house, scratched his arm on a nail; there developed a severe attack of streptococcus septicemia. The little daughter of Mrs. F. soon had the now familiar sequence of tonsillitis, acute rheumatic arthritis, endocarditis, and chorea. And, finally, John M., a son-in-law of Mrs. F., had an attack of fulminating appendicitis, with gangrene of the appendix and some two feet of adjacent intestine, resulting in the death of the young man. All these people were living under the same roof, and in each there occurred a severe streptococcus infection, although different organs or tissues were attacked respectively in each one.

In another case which came under my care about three years ago, a young lady was suffering from acute follicular tonsillitis. Just as the throat inflammation was beginning to subside, acute appendicitis set in and demanded prompt operation. Here, the susceptibility of lymphoid tissue to infection by the streptococcus is well illustrated, it being well known that the tonsil and the appendix are histologically quite similar.

So, a patient who has sustained an attack of lobar pneumonia may thereafter be practically immune against subsequent attacks of pneumonia, but later suffer greatly from pneumococcus infections of the nasopharynx, middle ear, and the like.

As for myself, I had a very severe attack of acute rheumatic arthritis, at the age of 16 years. Since then, I have never had a similar attack; but, until I had my tonsils removed, I would have an attack of tonsillitis every time I attended a case of acute arthritis. Presumably, incomplete immunity on my part.

In the study of immunity, the attention of the investigators has been centered almost wholly upon the blood, to the exclusion of the subcutaneous and muscular tissues. This would appear to be all wrong, as the same blood supplies the skin, subcutaneous tissues, joint-structures, nasopharyngeal mucosa, pulmonary tissues, appendix, and other tissues. Yet, what a diversity of location of the tissue whose resistance to infection is below par, as has been detailed in the examples given in the paragraphs immediately preceding. This would point to some intrinsic variation in the cellular chemistry of the various tissues, which makes one tissue or organ a favorable breeding-ground for some specific microorganism, while another part of the same person's body is entirely immune to it,

for the time being, at least. Discoveries may yet be made in cellular chemistry which will aid us materially in our endeavors to confer immunity against bacterial invasion (infection.)

Various Forms of Immunity

Immunity may be complete or only partial. Man is naturally completely immune to hog-cholera. On the other hand, the higher apes, while never naturally infected with syphilis, may, under certain conditions, be inoculated experimentally with this disease. Again, one attack of any of the acute exanthemata, as scarlet fever, measles, and the like, usually confers complete immunity upon the individual for the remainder of his days; however, in a small proportion of persons, this immunity may be only partial, so that a second attack may be sustained.

Also, immunity may be either natural or acquired. Allen¹ defines *natural immunity* as "the resisting power inherent in an individual, independent of influences from without"; while "*acquired immunity* is the resisting power gained by an individual in consequence of influences from without."

Natural immunity is generally characteristic of all the members of a given species. Thus, for example, man is naturally immune against the organisms of hog and of chicken-cholera; again, the lower animals generally, against the gonococcus.

In *acquired immunity*, the protection is generally the result of the processes whereby recovery is brought about in an individual against invasion by that particular microbial agent against which the immunity has been acquired; for example, typhoid fever, diphtheria, varicella, variola, measles, pertussis.

However, acquired immunity may be conferred in other ways than by accidental infection. Immunity may be *passively* acquired by the administration of serum, or antitoxin. An *active* immunity may be acquired (a) by inoculation with an "attenuated virus"—cowpox, or vaccinia for example; also, in the bovine species, by blackleg-vaccine; (b) by the subcutaneous injection of a killed culture (bacterin) of the specific pathogenic bacterium against which immunity is desired.

We may say that recovery from all infectious diseases is owing to the acquirement of an immunity; and this may be partial or complete, local or general.

It would appear, from the investigations of many workers, that the acquiring of this

¹Allen: "Vaccine Therapy and Opsonic Treatment". 4th ed., p. 4.

immunity depends, in great measure, at least, upon the elaboration within the tissues of various substances having a deleterious action upon the bacteria and the products of their activities. These immunity-conferring substances have been given the general name of immune substances or antibodies. Some of these appear to be products of normal tissue activities and, therefore, always to be present in greater or less amounts ("nonspecific antibodies"); others are of service only against that particular species of bacterium in response to the entrance of which they have been elaborated ("specific antibodies").

Nature of Bacteria and Their Toxic Products

Before defining the various antibodies, it may be well to consider for a moment the nature of bacteria and their toxins. To the lay mind, bacteria is a synonym for microscopic "bugs," or animalcules; while, to the average medical man, they represent the lowest order of vegetable life—microscopic, unicellular plants.

Although this latter view is correct, so far as it goes, the matter is not as simple as it may seem at first glance. The protoplasmic bodies of pathogenic bacteria contain a large percentage of proteinic (albuminous) material, which is highly toxic to the animal economy. Then, too, bacteria, as a result of their metabolic activities, produce, among other chemical substances, *toxins*. Toxins, again, may be elaborated and retained within the bacterial cell ("endotoxins"); or they may be set free into the surrounding medium ("exotoxins"). The exotoxins show a selective affinity for some particular tissue. Thus, diphtheria- and the tetanus-bacilli are the most conspicuous examples of bacteria producing exotoxins that have a selective affinity for nerve-tissue. It may be remarked, in passing, that about the only antitoxic sera which have proven of signal value in the treatment of infections are those prepared against these two diseases, diphtheria and tetanus, the causative agents of both of which produce exotoxins.

In marked contrast to the foregoing exotoxin producers, are the members of the streptococcus group of pathogenic bacteria, which produce only endotoxins. The anti-streptococcal serum is antibacterial, causing a destruction (bacteriolysis) of the bacterial cell, with consequent setting free of the contained endotoxins. Sometimes, when the patient is already giving evidence of extreme toxemia, the administration of a large dose of antistreptococcal serum may cause such

wholesale destruction of the streptococci that the human organism is completely surcharged with the additional flood of liberated endotoxin, and the exodus of the patient be thereby hastened rather than retarded.

By whatever method an immunity may be brought about, it is in response to the introduction into the human tissues of a sufficient number of bacteria, with their contained toxic proteins and specific endotoxins, and their subsequent production of exotoxins. The presence of these toxic substances acts as a stimulus to the formation of immune substances or antibodies by the leukocytes (probably chiefly the large mononuclear and polymorphonuclear varieties) and the fixed connective-tissue cells.

Antibodies Defined and Described

These immune substances, or antibodies, are of various kinds, possessing different roles. In our present study, we shall consider only those a working-knowledge of which appears to be indispensable to a proper understanding of the rationale of serum- and bacterin-therapy. These substances are known, respectively, as "antitoxins," "agglutinins," "lysins," and "opsonins."

Antitoxins are complex chemical substances elaborated within the animal organism (the human body), in response to the presence of bacterial toxin, with which latter substance they combine, the effect being, to neutralize the poisonous properties of the toxin. Antitoxins doubtless are specific; that is, the antitoxin formed in the body to neutralize diphtheria-toxin would have no appreciable effect upon the toxin of tetanus, and conversely.

Agglutinins are substances formed within the body which, when brought in contact with pathogenic bacteria, cause an "agglutination," clumping or massing together of the bacteria. Agglutinins are not so nearly specific in their action as are antitoxins, in that an agglutinin formed as the result of invasion by one variety of pathogenic bacterium often will cause the agglutination of a closely related group of organisms. For example, a blood-serum that will cause the clumping of typhoid-bacilli often will produce a similar agglutination of the various paratyphoid bacilli.

This latter phenomenon seems rather suggestive of the probability of the "pleomorphism" or "mutation" of one socalled "species" of disease-germ into another, especially in the light of results of experimental work recently carried out by Rosenow (of which more later).

Agglutinins are made use of in a diagnostic way, as well as in the treatment of disease. This is best illustrated by the well known Widal test for typhoid-fever, in which the patient's blood-serum is mixed with a living or a killed culture of typhoid-bacilli, and then the ensuing reaction is noted. If the patient is the victim of, or has been immunized against typhoid, his serum contains agglutinins specific against the bacilli, even early in the disease, before the clinical symptoms have become surely diagnostic of the condition.

As the result of the presence of this specific typhoid agglutinin, the bacilli in the test soon begin to clump together in masses, this phenomenon being visible, not alone with the aid of the microscope, but to the unaided eye as well. And not only does this specific reaction take place when a living culture of the typhoid bacilli is employed, but also when killed bacilli are thus used—except those killed by heat.

Wright² has done an immense amount of research-work, along the line of specific agglutination tests, for the diagnosis of various infectious diseases. In fact, it was while working out specific agglutination tests for the differential diagnosis of Malta, typhoid, malarial, and other fevers affecting the British soldiers quartered along the Mediterranean that he hit upon the idea of employing killed cultures of pathogenic bacteria (bacterins) in the treatment of infectious diseases. We shall have occasion many times in these papers to refer to the work of Wright; indeed, it would be impossible to write any paper upon the subject of bacterin-therapy without doing so, for reasons which will soon become obvious.

Lysins, or, more particularly, bacteriolysins, have the property of destroying the bacterial cell, that is, of causing its disintegration. Reference to this action of anti-streptococcal serum was made when considering endotoxins. Antistreptococcal serum is perhaps the best example that could be given of a serum containing chiefly bacteriolysins as the immune substance, or antibody.

Opsonins (from the Greek word "opsono," meaning, "I cater," or, "I prepare for eating") are substances, elaborated within the animal body, which have a sensitizing action upon the invading bacteria; that is, the opsonins unite in some way with the bacteria, so that the latter fall a much easier victim to the phagocytes (leukocytes, white blood-corpuscles). Wright laid much stress upon the function of the opsonins in the production of

immunity; while Metchnikoff regarded "phagocytosis" as almost, if not quite, the only important factor concerned in immunity. It now appears that these two processes, opsonization and phagocytosis, go hand in hand and that each is indispensable to the other.

By *phagocytosis*, we mean the ingestion and destruction, by digestion, of pathogenic bacteria by the wandering cells (devouring cells, polymorphonuclear leukocytes) of the blood, which, in response to the entrance into the body of pathogenic bacteria in considerable number, leave the blood stream and pass through the tissues to the focus of infection. There, under suitable conditions, these highly useful scavenger-cells, or phagocytes, surround and engulf the offending bacteria and destroy them by a process of digestion. This sounds simple enough; but, the bacteria must first be sensitized by the opsonins. Then, also, in some cases at least, the agglutinins and bacteriolysins play their part in making the microbial agents fall an easier pray to the phagocytes.

There are a large number of other immune substances that doubtless play an important, though a somewhat minor, role in the production of an immunity; but we cannot here go into the complex details, many of which are not yet well understood, even by the recognized experts in this special line of work.

Ofttimes, to employ a colloquialism, the phagocytes "bite off more than they can chew," taking up a greater number of bacteria than they can dispose of; or the bacteria may be of an extreme virulence; and, as a result, the defenders, and not the invaders, fall in the battle.

Pus is a mixture of blood-serum, living and dead white corpuscles, tissue-cells, and bacteria and the toxins of bacteria.

Some opsonins seem to be general in their action, while the great bulk are specific. That is to say, it seems that there is constantly on hand, in a healthy individual, a certain store of opsonin available against bacteria in general. But, infection with any particular pathogenic germ calls forth the production of a relatively greater amount of specific opsonin, the action of which is against that particular germ alone.

Opsonins are also found in human milk, in about one-fifth the amount present in the blood.³ This may possibly prove an important factor in the immunity of nursing infants against infection.

It is highly probable that the leukocytes, especially the large mononuclear variety, have

²Wright: "Studies in Immunization" (1910).

³Allen: "Vaccine Therapy and Opsonic Treatment"; 4th ed.; p. 29.

for one of their functions the production of antitoxins. In certain of the acute infections, notably lobar pneumonia, the prognosis is best when there is a high leukocytosis, and grave when there is no increase in the leukocytes, or even a decrease in their number (leukopenia). A connection between this fact and the role of the leukocytes in antitoxin formation is highly probable.

Bacteriolysins are believed to be formed by the polymorphonuclear leukocytes. In bacterin therapy, an attempt is made to

compel healthy tissues vicariously to protect diseased ones. The latter having failed to respond to infection by the elaboration of antibodies in quantities sufficient to overcome the infection, a stimulus is applied to the former by the subcutaneous injection of killed cultures of the offending bacteria, in the hope that the healthy tissues may respond by producing antibodies in comparatively large amounts, the deficiency thereby being made good at the focus of infection.

[*To be continued.*]

Adventures of a Frontier Doctor

No. 2. At the Mercy of the Skiptuat

By CHARLES STUART MOODY, M. D., Hope, Idaho

WELL, well, how time does fly. (Where, I wonder, have I heard that expression before?) It is now nearly twenty-five years since my wife, the brand-new baby, and I reached our destination on the eastern half of the Nez Percés Indian Reservation, then soon to be opened to white settlement. Clad in the garments of early spring, the country that greeted our eyes was a most beautiful sight; so beautiful, indeed, that even now when I look out upon some lovely landscape my mind unconsciously compares it with that Indian land of the years that are gone. What wonder that the simple-minded red man hesitated to sign away his title to this glorious land. As it was then, untouched by the plow of the husbandman, smiling in the sunshine, it was truly an ideal home for those simple children of the untilled wastes. All that is now changed; the restless, invading white man has harried the fair face of the land and caused it to bedeck itself with a different green; the original inhabitants have gone to face the sunset in the West, except for one, here and there, who, perhaps wiser than his fellow clansmen, has adopted the ways of living of the white brother and has managed to survive the cataclysm that is destined to engulf his race.

As the four-horse wagon, that had conveyed us across the mountains in a three-day's journey, drew up on the little green patch facing the shining river where we had chosen to fashion our habitation, there was none to greet us, save a few Indians lounging about. These redskins eyed our coming with stolid Indian indifference, except one. This one came up to us, and in fairly

good English gave us welcome, then reached up his hands for the baby. As my wife consigned the little one to his keeping, it was with much misgiving, little knowing at that time that one of the most lovable traits of the Nez Percés is their love of children. White men were few on the reservation and of white women there were none; a passing miner now and then, a few squawmen, those were all that we could see. The post-trader and his wife, four miles down the river, were our nearest neighbors. Rather a lonesome outlook for a young woman used to companionship and the society of her kind. Thank God! she was of the stuff that pioneers are made, and never, in all the years that were to follow, has she murmured at her lonely lot.

The Log-Cabin Home

We set to work immediately constructing a rude log cabin, wherein to dwell and store the few medicines and appliances my meager pocketbook had been able to procure. Time sped rapidly that spring; there was much to do and little help. The Indians were willing to assist, but did so in that spasmodic, ineffectual manner characteristic of the aborigine everywhere. When we arrived the salmon-run was on in the river, and, so, it was quite the usual thing for my helper for the time being to lay down his ax, get his canoe and go fishing for the day, thus leaving me to handle the heavy logs alone. As a slight compensation for his ungracious desertion, the Indian always shared his catch with us. Fortunately, I had been trained to woodmanship, hence was not at a loss as

to what to do. In due time our cabin was complete and we foresook the tent for our more substantial dwelling.

When the walls of our cabin were about half up, a tall old savage, dressed in all his native finery, rode up one day, dismounted and proceeded very minutely to examine the premises. Without vouchsafing a word of greeting, he walked all about the place, eying everything with ill-concealed scorn. His investigation completed, he mounted his pony and rode away.

"That," said the Indian who was helping me that day, "was the *hyas sikiptuat*." In other words, he informed me that our visitor was the chief medicine-man of the tribe. That was when I learned that the Indians still adhered to their ancient tribal customs, among which was the employment of the native medicine-man, or *shaman*, in illness, a piece of information that was destined to cause me a great deal of anxiety in the very near future.

Spring passed and summer came. We were having but little professional employment; for, the Indians were loath to trust their lives into the hands of the untried white "sikiptuat" and were seemingly content to heal themselves with that old tried and true remedy, the *vis medicatrix naturæ*, or through the incantations of the medicine-man. To tell the plain truth, my only patient for two months was a cow with a broken leg, in the adjustment of which, moreover, I did not cover myself with any particular glory.

Along late in June, my wife and I were seated on the river-bank one day, when we saw an Indian canoe coming down the rapids with the speed of an arrow. The canoe turned in to the shore and a stalwart savage leaped ashore. He came up and in broken English made us understand that his child was very ill and that he desired me to accompany him some half-day's journey up the river to his tent. From his actions more than his words, I gathered that the little one was suffering from some form of infantile diarrhea—a disease very prevalent among the Indians—and that the child was really seriously sick.

The First Professional Visit

Before going to my present station, my preceptor had received from The Abbott Alkaloidal Company (then just starting in business) a quite liberal-sized granule-case. This, one day, he handed to me with the remark: "Charlie, I am too old now to learn new tricks, but here is something that I

am inclined to believe will one day revolutionize the practice of therapeutics; take it and see what you can make out of it."

Thus far I had had but little opportunity to try among my Indians these alkaloidal granules, while this was an occasion where it would be impossible to carry a heavy medicine case. So, I slipped the little case filled with the alkaloidal granules into my coat pocket and announced myself ready for the journey to see the ailing child.

Taking one side of the river, to avoid the swift current, my Indian boatman plied his paddle so effectively that we arrived safely at the Indian settlement just as the sun was hiding himself behind the western hills. Several families were making their summer home at this spot. Almost the first person I met, when I stepped ashore, was the old medicine-man visitor of the previous spring. The old fellow eyed me with such positive malevolence that I asked my guide what was the trouble, and was informed that the medicine-man was jealous of my interference in the case and was trying to incite the other Indians to mutiny. As we walked up the shore toward the tepee where the sick child lay, I noticed that the Indians drew aside and were morose and sullen, watching my every move with angry glances.

We entered the tepee, which was still hot and close from the heat of the summer day just passed. The little one, so thin and wan that it bore little resemblance to a human being, lay upon a couch in one corner while the mother vainly endeavored to drive away the flies that covered the little sufferer in swarms. I found the mother to be an intelligent Indian woman, who had been educated to some extent by that lovable Indian missionary, Miss Kate C. McBeth. I was pleased to find her in command of sufficient English so that my instructions were intelligible to her, for, at that time my command of the Nez Percés tongue was still decidedly limited.

Never did a case look more hopeless to me. The little fellow was so weak that he did little but moan, lying with upturned, half-closed eyes, while the bowels moved involuntarily every few minutes. Those of you who have practiced among the lower classes will recognize the picture without further elaboration. Intestinal antisepsis was then in its infancy, and only a very few practitioners were brave enough to advocate it; however, I resolved to give it such a trial as it had never had before west of the Rocky Mountains.

The child's heart action was a mere flutter, like the feeble efforts of a captive butterfly to escape, and I realized that something must be done at once, else my little patient would be numbered with the angels. My pocket-case contained a vial of glonoin, and, so, I took out a tablet containing 1-250 grain and dropped it into the child's mouth. In a few minutes this was followed by another. To my intense delight, I perceived a red tinge showing through the copper-hue of the skin and that the heart was responding to the stimulus. Then I proceeded to institute intestinal antisepsis. Before going on with this, however, I had the good sense to administer a copious enema of pure hot water.

My granule-case contained tablets of sulphocarbonate of zinc, a salt which my old-style textbooks asserted could not be given in greater doses than 1 grain. Here was a case, however, that demanded heroic treatment, and the little brochure on the granules, which I had been reading, insisted that zinc sulphocarbonate was perfectly harmless in 5- or even 10-grain doses. So, I crushed a 5-grain tablet in a little water and managed to get the child to swallow it. In a few minutes I gave another and yet another. The way I poured that zinc salt into that kid would have made the man who compiled the U. S. Dispensatory turn over in his grave had he heard of it; however, along toward midnight I had the pleasure of seeing the bowel movements become less frequent, the distressing vomiting cease, the upturned eyes come back to the normal, the continuous moan give place to calmer breathing. Then, tired out by my long journey and the constant vigil, I gave the child's mother some simple instructions relative to administering the medicine and told her to call me early in the morning.

The Nightly Surprise

I stepped outside the tepee, intending to go down to the river-shore and sleep the rest of the night on the warm sand. I had not proceeded ten feet when a rope fell over my shoulders, and before I could free myself it was jerked tight around my arms, a powerful and not overly clean hand was clapped over my mouth, several arms seized me and, struggle as I might, I was borne down to the earth. All of this was done in perfect silence and so quickly that I hardly knew what was happening. Dark forms were outlined above me as I exerted all my strength to free myself, and among them I discerned the gigantic figure of the Indian medicine-

man. In less time than it has taken to tell, I was bound, gagged, and carried to a tepee, on the outskirts of the village, was thrust inside, and there lay on the bare ground, wondering what was to happen next; indeed, to be truthful, I felt just a little frightened at the turn things had taken.

In a short time, I heard the sound of the medicine-man's tom-tom beating in the tepee where the sick child lay, and heard also the monotonous drone of the old man's voice as he sang his incantations. I lay thus all night, the thongs cutting into my flesh, while I listened to the ceremony of the savage practitioner who had evidently taken this means of supplanting me.

Dawn comes early in these latitudes and it was perhaps no later than four o'clock in the morning when I heard the first sound of the Indians beginning to stir in the camp. Now, the Indian dog is a strange animal, half dog, half coyote, apparently, and will pay no heed to the Indians, but the smell of a white man seems to attract him. It was not long before a half dozen of these canines were sniffing about my prison, and soon one of them gave a long-drawn wolflike howl, which was chorused by the others.

Then, in a few minutes, I heard the patter of moccasined feet and a sharp command in a woman's voice. The dogs scattered and the mother of the sick child thrust her head inside the tepee. It was still dark inside and at first she did not see me; but, making a supreme effort, I rolled over. With a motion quick as a cat, the woman sprang into the tepee, whipped out a knife, and cut my bonds. As soon as my hands were free I tore the filthy rag out of my mouth.

"How is the baby?" I asked.

"It is better," she replied. "But, how came you here?"

I told her as briefly as possible.

"Lotwick told me that you had said the child could not live and were gone. Wait," she continued, then slipped out of the tepee.

I sat there in suspense for several minutes, fearful that the medicine-man or some of his followers would come and discover that I had been freed. After some ten minutes the woman returned, slipped into the tepee, and from the folds of her dress produced a heavy Colt's revolver fully loaded. "Take this," she said, "and use it if necessary."

That effective-looking weapon seemed to me like a friend from home. With it, I was prepared to face the medicine-man and all his friends. With the revolver clutched in

my hand, I left the tepee with her and walked over toward the place where the sick child lay. The medicine-man was still in the tepee and still engaged in his ceremonies. One glance at the child told me that it was much improved. I approached the medicine-man and told him to get out, at the same time emphasizing my remarks with

the revolver. While the words were probably not understood, it seemed the weapon spoke some sort of universal language, for the old chap sprang to his feet and vamoosed like a frightened rabbit.

I remained with the sick child until noon, then, with my Indian friend as canoe man, shot down the river homeward.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

II.

IN THIS paper, some of the methods of handling emergency-cases of the kind that occur in factories and workshops will be outlined.

As a matter of interest, the subjoined table will show just what trades and occupations furnish the greater proportion of these, the civil occupations, exclusive of railroading, alone being considered. Railroad emergency-work is really in a class by itself and will be so treated in a later paper, while this one will be confined to the purely manufacturing industrial accidents.

| | |
|---|--------------|
| Teaming..... | 22.9 percent |
| Quarrying..... | 15.7 percent |
| Mining..... | 14.6 percent |
| Building trades..... | 11.4 percent |
| Chemical manufacturing..... | 9.2 percent |
| Electricity..... | 6.3 percent |
| Glass..... | 4.9 percent |
| Printing..... | 2.8 percent |
| Manufacturing, average of all combined..... | 9.5 percent |
| Farming..... | 11.1 percent |

It must be remembered that about four-fifths of the injuries handled are minor in character, and that they are of importance only because *time* is the great desideratum; in other words, the injury must be so cared for as to give the quickest possible positive result and prevent the loss of the fewest possible number of days both for employer and employee. Regarding this latter important point, the First-Aid Conference, at its meeting held in Washington, D. C., in August, 1915, decided that "the earlier the first aid, the better the immobilization, the more careful the transportation, the shorter [will be] the period of disability and the less the loss of function."

Speed does not necessarily mean the rapidity with which the relief-measures are undertaken and performed, but rather the

consistent, conscientious, painstaking manner of caring for the injured person and with the least possible loss of time; and to this end the most carefully planned organization must be built up. It must also be considered that the patient does not want to lose any more time than is absolutely necessary, inasmuch as he is dependent entirely upon the work of his hands for the support of himself and family; while, on the other hand, the employer does not wish to lose the time of his artisan, because the latter's work constitutes a cog in the great wheel of his manufacturing processes, without which it will move but jerkily.

When a Workman Is Injured

Inasmuch as speed applies to every step of the process which follows the occurrence of the accident, the manner of handling the case will be considered in detail.

When one of the men is hurt, he (if in condition) reports at once to his foreman, exhibiting the injury and stating how it occurred. If the injury is such that he cannot do this, then a stretcher (always kept within reach near the first-aid cabinet) is brought and he is carried to the hospital-room, if there is one in the building. If on account of the severe nature of the injury it should become necessary to call the surgeon (and this comes within the scope of the foreman's duties and is left to his judgment), the corporation-surgeon can always be reached at once; for, it will be remembered, he devotes his entire time to this work, so that, making a speedy run to the factory by automobile, he usually "gets on the job" inside of five minutes. The doctor thus sees the injury free from any but occupation contamination, the foreman having only applied a pad of sterile gauze from the first-aid cabinet, in accordance with his instructions;

for, the latter absolutely prohibits the *ad interim* application to the wound of any water or other cleansing or disinfecting agent, while in cases of considerable hemorrhage the foreman has instructions to apply only the sterile pad and pressure—it being considered better for the surgeon to apply the constrictor, if needed. The doctor now having assumed entire charge of the case, the actual dressing of the injury is performed, either at the surgeon's office or, if the lesion is one of major character, at the hospital, in this case only such details being attended to at the office as are necessary to insure safe transportation.

It will be observed that in the handling of the case thus far absolutely no time has been lost—no waiting to find telephone numbers, no sending for another surgeon because the first one called was out, no hurried consultations to determine what shall be done. All this has been foreseen and provided for; and, with the smoothness of the movement of a great mass of machinery, the injury is cared for according to the best-known methods of modern surgery, with the least possible loss of time, and with due regard for the interests of everyone concerned.

The relative frequency with which one meets the various kinds and classes of injuries is of interest, and the table below gives a fairly accurate picture for purposes of comparison and enlightenment. These figures, of course, will vary with the location and the nature of the surgeon's work; nevertheless, they will give an idea of the relative frequency with which the various classes of injuries are encountered. Thus, in a total of more than 5000 accidents, there were

| | |
|----------------------------|------|
| Fractures | 1500 |
| Simple | 700 |
| Compound | 875 |
| Lacerated wounds | 640 |
| Contused wounds | 510 |
| Communions | 500 |
| Burns | 290 |
| Avulsions | 230 |
| Dislocations | 85 |
| Sprains | 75 |

These classes will be taken up and treated individually in the order in which they occur in the above table.

Fractures: Diagnosis and Management

In the care of fractures, the only diagnosis accepted is an exact diagnosis; and this is not a difficult matter in over one-half of the cases met with; for, as will be seen by reference to the table, they are compound, and indeed comminuted, and all other conditions described

by the words that mean complicated, infected, and difficult to handle. The surgeon usually gets an inkling of the nature of the condition before he leaves the emergency-station, and, therefore, is fully prepared in the matter of immobilization-dressings, both permanent and temporary. In the simple fractures, the question of exact diagnosis is sometimes more difficult. At all events, the x-ray apparatus must always be within touch, so that a skiagram may be made following a careful examination and exact diagnosis of the position of the fragments; especially is this important when the fracture implicates the joint surfaces.

An attempt to place a permanent fixation-dressing is rarely made at the place of the accident; only a dressing of a temporarily retentive nature being made and then the patient transported to the office or hospital in an ambulance, where the permanent retention-dressing is placed in position. This dressing is made of plaster-paris, and reinforced with metal strips when it is necessary to fenestrate, as so often is the case.

The position in which the injured member is fixed depends wholly upon the nature of the fracture, its obliquity, amount of comminution, and many other modifying factors; suffice to say that here is where the resources of the surgeon are severely taxed, for, no rule can be formulated, one being guided and governed entirely by the necessities of the particular case. One daring surgeon with whom the author is acquainted dresses most of his compound fractures with a complete plaster cast, *without fenestrating*, and then lets the case go for eight to ten days without redressing—and he gets the most excellent results, too. His preliminary disinfection, operative measures for mechanical fixation, and manner of applying the cast, however, are most careful. Still, greater conservatism is to be recommended in these cases—one cannot be too careful.

Before the patient is discharged, it is well to take a final skiagram, for purposes of comparison—and the fact should be clearly borne in mind that the skiagram is not admitted as evidence in a court of law, unless it was taken under very certain specific conditions, which are not often complied with.

Lacerated Wounds

Lacerated wounds next engage our attention; and it is here that the question of disinfection comes so clearly to the front, and that the manner of application and what agent to be used becomes of such import-

tance; for, it is in these cases that the action of our disinfecting agent can be studied from day to day and the results compared with other agents used in previous cases. Every surgeon has his favorite remedies, and naturally he praises these when speaking of the good results obtained by him—due entirely, of course, to the disinfecting agent used. However, the process of elimination has caused many of the older agents to be shelved, and more recent experience seems to point definitely to iodine as the ideal local antiseptic for general use; for, it is easily handled and applied in the form of the tincture or other solution. Thus, for instance, the United States Army medical department has recently adopted this particularly practicable agent in its service; namely: a mixture of 1 Gram of iodine and 1 1-2 Grams of potassium iodide is put into a glass tube, and this powder, when needed for use, is dissolved in 50 Cc. of alcohol or water. So, also, the use of iodine was highly recommended at the meeting of the First-Aid Surgeons held last August. Indeed, iodine is probably the antiseptic agent most universally employed at present in the treatment of accidental wounds.

However, certain factors are essential in order to obtain best results, and prime among these is that the wound be kept entirely free from water. Foremen in shops are instructed to keep the wounded men away from water, for it is so very natural to apply cold water to the part, in order to wash the blood away. It has been found that this wetting interferes materially with the antiseptic action of iodine, and not only limits its germicidal action, but has a tendency to give rise to blebs when applied to thoroughly moistened skin.

Next in importance comes the necessity of the freedom of the wounded parts from grease. This removal of grease and dirt can be effected with the aid of oil of turpentine; the latter being removed with alcohol. It is well to bear in mind, however, that it is of more importance to apply tincture of iodine *early and thoroughly* than to "dab and fuss around" with other agents without really accomplishing much good; for, iodine exerts the greatest germicidal action, and the sooner it is applied, the sooner there will be inhibition of pernicious bacterial activity.

Regarding these lacerated wounds (of which, as seen by the table, there are quite a large proportion), it is to be remembered that they are rarely simple lacerations, but mostly are produced by a combination of crushing, cutting, and tearing forces; and this makes good results much harder to ob-

tain, inasmuch as there has been ground into the tissues all manner of occupation-detritus, which obviously increases the difficulty of obtaining anything like a clean surface and thus retards the healing process.

Importance of Conservative Surgery

The nature and importance of speed having been well emphasized, just a word will here be written regarding another cultivated surgical virtue, but one very difficult to attain; namely, conservatism. The surgeon is so often tempted, especially at the end of a long and arduous day, to gain a rapid and brilliant result by amputating. But, wait—is the result truly a brilliant one? The workman is brought in with a hundred-thousand-dollar maimed arm. Yes, that man's arm is worth all of that sum, when one considers the number of years (if he be young) of possible usefulness lying before him; the help and support which he should yet give to future workers, his children, born and unborn. Well, there he lies on the table, and it's up to *YOU*.

Right here is where thought and the habit of thinking rightly comes in handily; for, under such circumstances, your first thought will then be, *conserve!* Straightway you will begin to plan and scheme to save just as much of that man's arm as you can; right here is where you will begin to snip and whittle and iodinize, put on a simple moist dressing; and then do all these little things over again at the next dressing. Nothing brilliant about that, no, no! But, still, your victory will be immeasurably greater, for, the final result will be far better, and nature's virile forces are standing invisibly at your elbow, ready and willing to help. So, then, my friend, conserve. Plan, plot, scheme, invent, utilize every possible chance to save that arm. It is so easy to amputate, I know, and it can be done so quickly. But, you can not sew that arm back on again! Trim and stitch and dress, trim and dress, day in and day out—it is a fine fight, worth any man's mettle; and the reward is so great that one single victory is worth many a cruel failure.

If, perchance, someone is reading this paper to find rules for the care of this class of injuries, then let it be said at once, there are no such rules. Make up rules for yourself as you go along—and then make a new set for your next case. For, that's what you'll have to do. Only, running through each and every set of your formulations, showing in letters of fire, and thereby burning deep into your inmost consciousness, let that word stand out

boldly—CONSERVATISM. Then, with this obligation as a trusty sentinel, you may wrap the mantle of surgical conscience about your form and lie down to pleasant dreams.

Conservatism Practically Applied

Now to get down to "brass tacks" on conservatism, just let us glance at the figures on the mortality following conservatively treated cases and those subjected to radical measures—it will surprise you to learn that it has been estimated that the mortality is 4 percent under conservatism as against 20 percent under radicalism.

When a patient comes to you with multiple injuries, put your pride "in your pocket" and get your professional brother from across the street to help you, letting him do one operation at the same time that you are doing another; for, it has been found that performing operations synchronously under such conditions will lessen mortality tremendously. Would that our professional breadth and charity might keep even pace with the great advances that have been made in surgery, for then the time would speedily come when we no longer should hesitate to send for "the fellow across the way," resting assured that he would do as much and as well for us and our patient as he would for his own patients, and only be thanking Providence for the proximity of such a good neighbor.

Contusions, Burns, Shock

Contused wounds occur next in order of frequency, and these are likely to be accorded very little attention, for the reason that they do not require surgical dressing. These little injuries, however, disable the workman, especially on the day after they happen; moreover, by causing restriction of the movements with which he performs his daily work, he is rendered more liable to still greater injuries.

For these reasons, even little contusions should be given careful attention; hot fomentations and liniments being applied at home, while vibratory massage is given daily at the office, until the patient has complete restoration of usefulness. There comes to mind one case, when the man presenting himself for treatment was laughed at by the young medical assistant, but when examined later in the day by his principal he was found to have sustained partial rupture of the biceps muscle transversely, which laid him up for six weeks and resulted in an impairment of usefulness from which he never fully recovered.

Comminutions have really been considered under the head of lacerations, and they occur

so often in conjunction with the latter class of wounds that further space will not be devoted to them. It may be said, however, that they are the class of injuries that respond to moist dressings *often renewed*; also, that they must be carefully watched for gangrenous spots.

Burns are sustained by foundry-workers, from contact with hot and molten metal. These (if slight) are best dressed with some unguent that not only excludes the air, but will keep the tissues clean as well. A simple unguent for the purpose may be made by triturating boric acid with vaseline; mention should also be made of the preparation known as unguentine, which is deservedly popular. Burns produced by chemicals—strong acids and alkalis—are to be speedily neutralized. This usually is done at the scene of the accident, from the first-aid cabinet, but may well be repeated when the victim is seen at the office. Severe tissue-destructive burns are to be treated like any other open wound, free drainage being provided for.

Avulsions have already been considered, while dislocations and sprains may well give way to a consideration of surgical shock.

Surgical shock is seen more or less in every surgical case attended. The many theories of the causation of shock are important only in so far as they give us a foundation for intelligently treating the condition. For practical purposes, it may be considered a depressed condition of the entire system, supervening as the result of an impression produced upon the central nervous system—in our cases, by virtue of the incident injury and its sequelae. Thus, we may have shock as the result of a mental impression alone, owing to contemplation of the accidental injury; or, the cause may be solely the accidental injury; and, finally, hemorrhage, whether produced by injury or disease, may be the inciting cause.

In any event, our course is clear, and we may follow but one line of treatment—stimulation. This may take the form of hypodermics of glonoin, strychnine, sparteine, inhalation of aromatic spirit of ammonia or the internal administration thereof, warmth to the extremities, and elevation of the legs—any or all of these measures being entirely dependent upon the given surroundings and whether severe hemorrhage is present or not.

Hemorrhage is the first consideration and should be stopped at once, preferably by the application of forceps, if possible, or by means of the constrictor if forceps cannot be applied; the operative ligation being the very last resort, and then only under favorable sur-

roundings and after all other means have failed.

The administration of saline solution, injected into the rectum, intravenously, or under the skin of the abdominal region or back, is still a sheet-anchor, although it must largely be confined to the time when we can get our patient to the hospital and have the assistance of nurses and the more favorable surroundings.

Electrical Shock and Gas Poisoning

Electrical accidents are comparatively frequent and may well be briefly considered here. In these days of electrical power sent hundreds of miles from a central generating station and furnishing energy to industries of many varieties, it behooves us to know what to do and how to do it quickly.

If one sees a man writhing and jerking from contact with a "live" wire, it is well to know enough to prevent one from adding another victim in a vain attempt to rescue the first one. Do not be afraid to step in and grab the victim's clothing as long as your shoes rest on a dry surface and you do not grasp any metallic object, such as buttons, belt-buckle or tools. One may even throw down the coat to make a dry spot for the feet. Then, using preferably only one hand, give a sharp, quick pull to the victim's clothing and try to break his hold on the wire. Of course, you will send someone post-haste to the closest switch, to have the current shut off, should the attempt to disengage the man not prove successful.

When the contact is broken, lay the patient on the ground, face down, and establish artificial respiration, having an assistant give stimulating hypodermics at the same time. In producing this artificial respiration, the best method is to lay the patient face downward and, taking a position astride his hips, to make pressure over the lower ribs, with the arms held perfectly rigid. The number of respirations per minute may be timed by the breathing of the operator. This effort should be persisted in for at least two hours, and even longer if there seems to be any chance of establishing automatic breathing.

Rhythmic pressure upon the precordial region should also be tried, to help the heart's action, when necessary.

Electrical burns are to be treated the same as ordinary burns, remembering that they are very intractable and slow to heal.

Inhalation of Gas

Men working in and around gas-manufacturing plants are sometimes overcome by the

continued inhalation of the gas, the usual kind being an impure carbon monoxide. The first symptoms are, pain and weakness, these appearing first in the calves of the legs and later becoming general, to which are added dim vision and vertigo. The surgeon seldom encounters these symptoms, not being notified, usually, until complete unconsciousness has supervened. The condition, of course, is asphyxiation combined with carbon-monoxide poisoning, and the indications for treatment are, the securing of rapid, vigorous and thorough elimination. This object is accomplished by at once removing the patient to the open air and there starting artificial respiration. Oxygen gas should be at hand and be used freely; remembering that, whatever efforts are made to resuscitate, they must be carried on persistently for two or three hours, or even longer. Atropine, sparteine, strychnine, or glonoin should be given hypodermically, while the body of the patient is enveloped in a warm blanket, in order to conserve surface temperature.

Too much cannot be said regarding the senseless administration of whisky in emergency-cases. It has, unfortunately, passed from the position of a remedy to that of a habit, but one which thinking surgeons nowadays are very generally discountenancing; for, the fallacy involved in the "give him a drink of whisky" has been pretty thoroughly demonstrated and few, if any, corporation-surgeons now carry it in their emergency-bags.

Eye Injuries. Tetanus

In *eye injuries*, aside from the lodgment of foreign bodies on the surface, the careful surgeon promptly calls in the eye-specialist; for, it is in cases of this class that more trouble has developed than in all the rest. The sole aim and intention of our treatment must be to do the *best* that can be done, and no general surgeon, much less a general practitioner, should ever attempt to pass an opinion upon an injured eye, especially when the injury is of a lacerating or penetrating nature or when the history of the injury makes it possible that such may be the case. Sympathetic ophthalmitis is too terrible an enemy to be combated, except by one who possesses special training. It is, therefore, the part of wisdom to place a first-aid dressing over the injured eye and at once to take the patient to an eye-specialist.

When there is the least possible chance for the wound to have been infected with tetanus-germs, as in injuries to teamsters or wood-workers, an injection of 1500 units of

antitetanic serum should be given at once; the site of the injection chosen being over the nearest large nerve-tract in the immediate neighborhood of the wound. In making this injection, it is well to push the needle well into the deeper tissues, being especially careful to avoid making it merely subcutaneous. Recently a powder containing the desiccated tetanus-bacillus has been prepared, and European surgeons are using this to dress suspected gunshot wounds.

The statement has been authoritatively made that the percentage of accidents in America is much higher than in Europe (of course, this was before the present awful war, which establishes a new special record), but, whereas the author is not prepared to

dispute the statement so far as regards railway accidents—where distances from a thorough and well-supplied first-aid base are much greater than in Europe—yet, as regards civil accidents among industrial plants, the assertion is confidently made that we, in America, are ahead of our European brethren in organization, speed, transportation, and many other facilities for the care of casualties of the kind that occur in and around our big manufacturing plants; and any person disagreeing with this statement is earnestly requested to visit and inspect some of the wonderful hospital-plants now being maintained by many of the large corporations. It will prove an education in itself and will be well worth the time spent.

Pruritus Ani and Pruritus Vulvi

By WILLIAM F. WAUGH, M. D., Muskegon, Michigan

HOWEVER it may be with you, my readers, I have always been as one of the blind men who laid hands on some part of the elephant. A striking case presents itself, or a spectacular recovery ensues, and I can not refrain from jumping at the conclusion that I have mastered that one particular malady. Is it not relatively true that we, all of us, generally form our conceptions of a disease from some single case that has impressed us profoundly?

A man walked into my office, laid a revolver down upon my table and said: "Unless you stop this damnable itching, I shall blow my brains out right here and now!"

Pruritus Complicating Narcotic Cure

A physician applied to me for cure of the morphine-habit. Removing the drug, anal pruritus set in with fiendish intensity. Determined to overcome the seemingly trifling malady that threatened to demolish the cure of the habit, I set to work. A rather comprehensive library was ransacked and every prescription and suggestion was culled. I procured alleged remedies by the dozen, and tried out everything at all promising in sight. Absolute failure was my reward. Later, I had occasion to open this man's abdominal cavity, and I found the colon shrunk to the diameter of a lead-pencil, and along each side there was a row of little cavities, in each of which reposed a scybalum. The discharge from these pockets kept up the irritation that occasioned the itching. The lumps were

removed and the bowel was cleansed with a warm solution of zinc sulphocarbolate, and the anal itching ceased until there occurred a reaccumulation of the fecal concretions.

Naturally, I jumped at the conclusion that this form of pruritus ani was due to irritation from retained fecal masses, and I acted upon that assumption. I had quite a series of cases in which relief actually followed the complete emptying and disinfection of the lower bowel. Small enemas of the zinc-sulphocarbolate solution, 5 grains to the ounce, prevented the nocturnal attacks of anal itching, which, beginning the moment the patient warmed in bed for sleep, occasioned great distress.

Then the treatment failed in one case, and the spell was broken—failure became the rule. I had only grasped the elephant's tail—so like a rope!

Third case: An English authority recommended scratching in moderation, and this was repeated to a patient. He took it seriously, and scratched immoderately. The pruritus rapidly increased, and he scratched the harder; until he tore up the tissues and let the parasites in to the deeper layers; and the result was a series of tumors that extended into the scrotum and back to near the anus—four in number, spindle-shaped, soft, not very tender. One suppurred, and then another, discharging blood freely and pus scantily. The others resolved slowly, vestiges being still present after two months. The laboratory found only *staphylococcus albus*.

So I was driven back to the local applications that had failed so egregiously in my early encounters; but I retained the emptying and disinfecting of the lower bowels as a preliminary. But which local application?

If we are dealing with a local parasite, we want an effective germicide, and one that affects the deeper layers of the skin as well as the surface—one with some penetrating powers. Begin with iodine. Clear the bowels with a sulphocarbolate enema; washing the perineal surfaces well with the same after soap and water; dry carefully, then paint with undiluted tincture of iodine. Repeat every night just before going to bed. If pruritus sets in, get up and apply iodine again. But—refrain from scratching!

The patient reported that for the first few nights the iodine application acted much as the compound tincture of benzoin had done, but seemed to "take hold" rather better. Then the itching seemed to be less intense, and it did not need a second application of the iodine. Two weeks the treatment was continued, and every trace of the malady had disappeared. The induration of the skin was dissipated and all fissures had healed. Three months later, the patient reported that several times slight itching had occurred, but each time a single application of the iodine had quelled it.

At the suggestion of Dr. J. E. Frazier, of Endurance, Colorado, I have also applied camphor to the itching area and have found it exceedingly active and affording quick relief. Since then I have employed mixtures of tincture of iodine and spirit of camphor, with decided benefit, in old, indurated cases especially.

Looking over the recent literature of this affection, I observe that some of the surgeons sever the nerves supplying the pruriginous areas, while one recently recommends cutting off the arteries, to lessen the blood-supply. After burning away the surface with fuming

nitric acid and having the itching recur where the skin had been, one gets pessimistic as to such measures. At best, they are aimed at the symptom, and not at the cause.

By the combination method herein described, we strike at all the known causes—irritation from rectal discharges, fissures and rhagades, local parasitism, and uncleanliness. Naturally, if there is present any rectal affection, hemorrhoids, fistula, "pockets and papillæ," and the like, we must give those the requisite treatment.

My series of cases during the few months that this method has been operated is too small for any positive statement. I am merely describing my present treatment, in the hope that my confrères may give it a general trial, so that, by reporting their results, we may arrive at a fairly correct estimate of its value and applicability. If one hundred readers of CLINICAL MEDICINE try it out, we ought to get a better idea of its value than any one of us, singly, could give from his single experience.

Will you do this?

Pruritus vulvæ presents the same problem, but with even greater need of disinfecting the discharges from the rectum and vagina—the latter being prone to cause itching at about the menstrual period, especially. Sometimes it is not sufficient to apply our germicides to the vaginal tissues, the endometrium having to be treated, likewise, with silver or some iodine preparation. Still more effective is the application of a galvanic current from the negative pole, on a properly insulated electrode.

For the vaginal douche, the zinc-sulphocarbolate solution is amply effective—provided the salt is chemically pure. For our manufacturing chemists, I must bear this testimony—despite the interference occasioned by the great war, I have had no difficulty in securing pure drugs, although, of course, the price has mounted very high.

SO GREAT is the effect of cleanliness upon man that it extends even to his moral character. Virtue never dwelt long with filth; nor do I believe there ever was a person scrupulously attentive to cleanliness who was a consummate villain.—*Rumford*.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

[Continued from page 49, January Issue]

The Clinical Picture

THE symptoms of acute and chronic cystitis are to a certain extent similar. Frequent desire to urinate, pain in the region of the bladder, back and perineum, occasionally referred to the rectum, and pyuria, are present in practically every case. However, in some of the milder forms of chronic cystitis there is comparatively little pain, yet the constant desire to urinate, and the tenesmus accompanying the act, render the patient's life miserable. When retention is due to prostatic hypertrophy, the condition is particularly distressing and in a short time the patient, in sheer desperation, resorts to the use of the catheter.

In acute cystitis urgent desire to empty the bladder may be experienced as often as two or three times in each hour; and the more frequently the act is performed the more acute becomes the burning sensation, which is, of course, due to compression of the engorged vessels surrounding the sphincter vesicæ. After each urination, cramp in this region may be severe enough to cause the patient to cry out or even faint. In the majority of cases, pain in the glans penis occurs during or independent of micturition; and, more rarely, constant distress in this region and through the corpora cavernosa is complained of.

The urine will be found concentrated, highly acid, as a rule, and it contains more or less pus, mucus, and epithelial debris. The pulse may be accelerated and the temperature elevated one or two degrees. In this connection, it is well to remember that fever is particularly likely to exist during an exacerbation of chronic cystitis, and in pericystitis. In the latter condition (which may follow a mild cystitis or vague abdominal or pelvic pain), there will be more or less suprapubic swelling corresponding to the shape of the bladder when full. Tenderness on pressure is pronounced and constant dull pain is experienced throughout the lower abdominal region. The patient loses appetite and strength and exhibits all the symptoms of pyemia.

Perivesicular Inflammation

Unfortunately, perivesicular inflammation following or accompanying, as it may, trauma,

pelvic cellulitis, appendicitis, prostatitis, pyosalpinx, parametritis, and similar conditions, is not always readily recognized, and therefore the essential remedial procedure (suprapubic or perineal incision and free drainage) is not instituted until unnecessary damage has occurred to the tissues involved and the patient subjected to much needless suffering.

The physician should remember that whenever a swelling persists in the bladder region after that viscus has been emptied perivesical inflammation is reasonably certain. If in addition there is elevation of temperature, pain upon pressure, and more or less tenesmus, the diagnosis may be considered settled.

In the mild forms, it is true, resolution may occur and occasionally a fistula forms between the suppurating area and the bowel or bladder, this permitting the discharge of the pus. However, it may be regarded as axiomatic that the treatment of pericystitis is *surgical* and the sooner incision is resorted to the better the prognosis. It is, of course, unnecessary to add that the underlying causative condition must be discovered and, wherever possible, corrected.

Treatment of Acute Cystitis

As has already been pointed out, treatment of acute cystitis, to be really effective, must be based upon an intelligent conception of the conditions present in the affected individual. In other words, one must not treat a disease-name, but rather such morbid processes as really exist at the time. In every instance, examine the urine *before* administering any medicine, and if there is reason to believe that the patient is taking home-made or other nostrums, order their discontinuance for forty-eight hours and then secure a sample of the urine.

In the interim, order a very light diet, prohibiting entirely all alcoholic beverages, coffee and tea, and instruct the patient to drink at least three pints of pure water or, better still, thin barley water, during each twenty-four hours. If the ordinary water supply is known to be poor and distilled water is available, order this used; under other circumstances, insist upon thorough boiling of all suspicious water. A properly prepared buttermilk may be used as a beverage, also skimmed milk or milk and lime water. Wherever possible, order the

ingestion with each draught of milk of a reasonably full dose of some virile and dependable preparation of the bacillus bulgaricus.

When the exact physical condition of the patient has been definitely ascertained, and the urine examined, the physician will be in a position to decide whether internal medication alone will suffice or whether local treatment is likewise necessary. He will know, also, whether the cystitis can reasonably be expected to yield to such treatment or whether it will require operative intervention. Should the latter be indicated, the patient should be placed in the best possible condition and presented to the surgeon at the earliest possible moment. Nothing, as a rule, can be gained by delay in these cases; in fact, usually too much time has been lost before the rational diagnosis can be arrived at.

Relief of Pain

Under ordinary circumstances, the first essential is to relieve the *pain*, and while many clinicians depend for this purpose almost entirely upon morphine, codeine, or chloral, the administration of more than one or two doses of these narcotics is decidedly unwise. In the acute exacerbations of chronic cystitis, particularly when the patient is advanced in years and has little or no resistance, it is a very easy matter to establish the opium habit; and, once the victim of an infected bladder realizes that relief from the terrific tenesmus and burning can be secured by the use of one or two little white tablets, he is reasonably certain to demand these—and get them.

Of course, cases occur where it is necessary to use morphine or codeine, but in every such instance the character of the drug should be withheld from the patient and the dosage kept as low as possible. I have found it desirable to alternate codeine, morphine, and hyoscamine, giving each drug for twenty-four hours. In the great majority of instances, the well-known combination of hyoscine, morphine, and cactoid can be used to advantage; the "modified" formula (hyoscine hydrobromide, gr. 1-400; morphine hydrobromide, gr. 1-16; cactoid, gr. 1-128; pilocarpine hydrochloride, gr. 1-64, and caffeine, gr. 1-32), proving peculiarly efficacious. One such dose may be ordered every two, three, or four hours to effect, then less often. In the meantime, the physician will, of course, attempt to remove the abnormal conditions which cause the pain. In the most severe cases we may find it best to first administer

a hypodermic of morphine, thus convincing the sufferer that we do know how to give relief; the anodyne effect may then be maintained by the cautious internal use of the modified H-M-C formula.

Local Applications for Pain Relief

Under ordinary circumstances, however, the physician should proceed along the following lines: A copious enema of warm physiologic saline solution is administered with the patient in the lateroprone position, and immediately thereafter hot epsom-salt compresses are applied over the bladder. Occasionally a hot sitz bath may precede this step. To prepare the compresses, dissolve one ounce of magnesium sulphate in each quart of water and keep this solution as hot as is tolerable; saturate therein a large bath towel, folded so it will just cover the lower abdomen. The towel should be wrung out, before its application, and covered quickly when in place with a second *dry* towel. These compresses should be changed every fifteen minutes and the treatment continued for two hours.

Usually immense relief will be afforded by these applications, which may be made every night or even twice daily. During the acute stage the patient should remain in bed, but if up and about must on no account be allowed to get chilled or wet; neither should he exert himself physically until the inflammatory conditions are well under control.

After the initial enema, give calomel, gr. 1-6; podophyllin, gr. 1-6; and irisoid, gr. 1-6, half-hourly for four to six doses, and two hours after the last dose a copious laxative saline draught. Thereafter, order the laxative (preferably one containing lithia) once or twice daily, and every third night repeat the cathartic. If the urine is highly acid, prescribe hexamethylenamine, grs. 3 to 5; arbutin, gr. 1; and sodium benzoate, grs. 5, every three hours, with at least six ounces of thin barley water or other mucilaginous beverage. If the urine is alkaline, substitute ammonium benzoate or add acid sodium phosphate in place of the sodium benzoate. In severe infections, the dosage of arbutin may be increased to 2 or even 5 grains.

When hyoscine or hyoscyamine is not being administered (as in the modified H-M-C formula), 1-1000 grain hyoscyamine sulphate may be given with 1-3 grain hamameloid and 1-3 grain eupurpuroid, every four hours.

This medication, modified somewhat, perhaps, to meet individual requirements, will prove promptly effective in the majority of

instances, but now and then we shall find it necessary to irrigate the bladder every second day—rarely oftener. After a somewhat extensive use of the various antiseptic agents recommended for irrigation, I now confine myself almost entirely to a mild boric-acid solution, followed by 1 to 1000 chiniosol, or 2 percent ichthyl solution. If colon bacilli are abundant, I use physiologic salt solution with a recurrent catheter; then, when the bladder is thoroughly drained, close the outlet and slowly inject the contents of one ampule of bulgarian bacillus bouillon. I also order one-half ampule of this bouillon internally, twice daily, the first dose on awakening, and the second just before retiring at night, and likewise inject, every second or third day, one ampule of stock colon-bacillus or Van Cott combined bacterin. If the gonococcus is demonstrated, the gonococcus combined bacterin will be substituted; and the patient receives (in *alternation* with the hexamethylenamine and arbutin, and replacing the hamameloid, hyoscyamine and eupur-

puroid combination), calcium sulphide, gr. 1-3; camphor monobromated, gr. 1-3; hyoscyamine sulphate, gr. 1-3000; methylene blue, gr. 1-3.

If the pain is unusually severe and it is deemed inadvisable to administer morphine or codeine hypodermically, suppositories containing 1-8- to 1-4 grain each of morphine sulphate and extract of belladonna may be employed. Under such circumstances, the lower bowel should first be thoroughly flushed with normal saline as hot as can be tolerated. Very frequently such irrigation will entirely relieve the pain for several hours. *The less opiates we use in cystitis the better.* Chloral butyl hydrate is a reasonably satisfactory substitute.

When there is more or less proctitis, or merely extreme sensitiveness of the lower bowel, rectal injections of thymol iodide in purified cottonseed oil may be given after stool and on retiring. They nearly always afford great comfort and, in my opinion, euophen exerts a distinctly remedial influence.

[*To be continued.*]

Postoperative Treatment

The Physician's Duty After the Operation

By C. W. CANAN, B. S., M. D., Orkney Springs, Virginia

MY SUBJECT, on first thought, may seem rather commonplace, but is, without doubt, one of much importance. The reputation of the surgeon as well as that of the attending physician many times hinges upon the treatment the patient receives after having been operated upon. But, even, to say nothing of these professional reputations, humanity demands that the patient be vouchsafed the very best chance possible for his or her recovery; yet, the result of many a brilliant operation is sadly marred by the absence of intelligent after-treatment. The present article is designed especially for the benefit of the country physician, inasmuch as many patients are turned over to the attending physician after they have been operated upon in the hospital of the smaller town or by a surgeon called to their homes.

As we all know but too well, the college-professor and our textbooks go into minutest detail as to how to make the patient ready for an operation, but either tell us very little, if anything, as to how the patient should be managed after he leaves the operating-room. These authorities expect the prac-

titioner, irrespective of his lack of experience, to be guided by general principles—which is all right, of course, to a certain extent. Nevertheless, every one of us knows that it is careful attention to the minor details (that are ever cropping up), more than anything else, that enhances the patient's chance for recovery. And this is not at all strange when we remember how even the slightest infringement of the rules of antiseptic surgery may cause the death of the patient.

Owing to the limitation of space, it will be impossible to go into every detail of the after-management of the various operations; consequently only the most important ones will be chosen, and the most up-to-date treatment be described for each.

The First Necessary Steps

Postoperative treatment begins as soon as the dressing is complete, and often even when the patient is still upon the operating-table and under the influence of the anesthetic. We refer here especially to lavage of the stomach. To our knowledge, there is no one measure that adds so much to the patient's comfort

as a thorough washing of the stomach. When the tube has been introduced into the stomach, warm water should be poured in and siphoned out again and again, until it returns clear and unstained. This procedure not only removes the contents of the stomach, but a goodly quantity of ether is eliminated at the same time. Then the patient is carried to the ready-prepared room and put to bed.

If the operation is one that is likely to cause much suffering, the patient may be given a narcotic tablet, because the result in many operations depends upon absolute quietude. A single bedstead of iron is always preferable; still, if such is not available (as is the case in many private homes), an ordinary wooden bedstead will do. Folding beds are never admissible. The bed should contain a hair mattress resting upon wire springs. Between the mattress and sheet a rubber sheet should be placed if there is likely to be much discharge or unconscious voiding of urine or feces; and in these cases a folded draw-sheet should be placed across the middle of the bed, this being easily removed without materially disturbing the patient. Folds in the sheets must be avoided, for they very quickly produce bedsores—a complication very liable to occur during prolonged decubitus. If at all permissible, the position of the patient should be frequently changed; while daily sponging with warm water, followed by a rub with alcohol, greatly aids in reducing the chance for this disagreeable complication.

If the operation has been at all prolonged, or if there are evidences of much shock, as soon as the patient has been placed in bed, he should be surrounded with hot-water-bags. However, the physician must see to this himself, unless a competent nurse is at hand; for, patients have been seriously burned by careless placing of these hot appliances. This is especially important while the patient is unconscious. I call to mind two patients who were thus severely burned. One was a child, who received a burn so severe that two toes had to be amputated. The other, a man, received a burn on his thigh, that caused a great deal of suffering and kept him in the hospital two weeks longer than otherwise necessary. Carelessness in this matter is certainly to be condemned.

Concerning the Patient's Position in Bed

Next, the position of the patient is very important, and it must be varied in accordance with the nature of the operation performed. Especially in operation for *appendicitis*,

with rupture of the abscess, or for suppurative peritonitis, there is nothing so important in the aftertreatment as the position of the patient. The accepted position in this condition is known as the semiinclined, the head of the bed being raised enough so that it forms a slightly inclined plane; which is the most favorable position for thorough drainage of the abdominal cavity. A surgeon of one of the large hospitals told me recently that as long as they employed the horizontal position they lost from 75 to 80 percent of this class of patients, but that since adopting the inclined position the death rate had been reduced to 10 percent, and that these fatal cases represented principally patients who were moribund before the operation was performed.

Another very important procedure in these critical cases is, the use of physiologic salt solution. I do not refer to infusions made into the circulation—which are very important under certain conditions—but mean the introduction of the salt solution into the bowel by the drop-method; that is, the apparatus for this purpose should be so fixed that the fluid issues only drop by drop, so that the mucous membrane of the colon can absorb it as fast as it is introduced. This measure is important in all critical conditions in which the abdomen has been penetrated or opened.

After operations on *head*, *neck*, and *chest*, elevation of the upper part of the body is considered most favorable, barring one exception; this being laryngeal intubation. When this is performed, the head should be kept very low, in order to prevent "schluck-pneumonia"—one of the most dangerous complications that can befall this class of patients.

The dorsal position is best suited after *laparotomies* or operations in the inguinal and perineal regions. The comfort of this class of patients can be greatly added to by instructing them to flex their thighs and then to place a pillow or some folded cloths underneath the knees. This class of patients often complain of the weight of the bedclothes, and this difficulty can be overcome by making a wire cradle and placing it so that it will keep the covering away from the abdomen.

After *amputation of a breast* the arm on that side should be fastened to the chest, in order to prevent moving of the pectoral muscles; these contractions otherwise causing unnecessary pain and interfering with the healing-process.

Before leaving this subject of position, I want to call attention to a complication that

sometimes occurs during a prolonged period of recumbency. I refer to *hypostatic pneumonia*, which is very liable to supervene in the aged when allowed to lie in one position for any great length of time.

Postoperative Vomiting

I have already referred to lavage of the stomach, immediately after the operation, for the purpose of preventing nausea and vomiting as a result of the anesthetic. While this procedure surpasses all others in preventing this trouble, there is still much to be done in certain cases to make the patient comfortable. If, after all, vomiting should continue, giving absolute rest to the stomach is our best remedial aid. We should not be influenced by the patient's begging for water, however great the thirst; for, the vomiting will continue. The patient must understand that the more water you give him, the more he will want and the oftener he will vomit. Cracked ice is often given, but this is like water—the relief is only transient—the stomach soon fills up, and the vomiting is repeated. Under these circumstances, hot water, given a spoonful at a time, is superior to crushed ice; still, if at all possible, the stomach should be kept completely empty, and vomiting will cease much the sooner for it. When, however, the thirst is very great and the vomiting persisting, an enema of hot physiologic salt solution is the best measure at our command to afford relief. A mustard-plaster placed over the middle of the stomach until the skin shows red is also beneficial in some instances.

Feeding the Patient

One of the most important duties in the whole field of postoperative management is, the feeding of the patient. The diet and the manner of feeding necessarily varies with the nature of the operation performed, but it is especially important after *laparotomies*, more especially operations on the gastrointestinal tract. Here, no feeding should be attempted by the stomach for four or five days, or even longer, according to the condition of the patient. We call to mind a case of gunshot wound of the stomach in which both walls of that organ were penetrated by a .44-caliber bullet, and in which instance feeding by the mouth was omitted for eleven days; and the patient recovered perfectly.

These patients should receive, every two or three hours, a nutrient enema composed of 2 drams of beef-juice and 4 ounces of peptonized milk. If stimulants are needed, 1-2 ounce of good whisky may be added. Should

the temperature exceed 102° F., 5 grains of quinine sulphate, rubbed up with the white of one egg, may also be added, and this continued until the temperature declines or there are manifestations of quininism. Should the bowel prove irritable or the pain be intolerable, opium or codeine may be added to the enema. The rectum should be washed out after every third or fourth nutrient enema. Under no circumstance should feeding of the mouth be thought of as long as the patient vomits, irrespective of the nature of the operation.

After *amputation of the tongue* or operation on the jaws, patients can be fed through the stomach-tube (which must be well oiled and carefully introduced); this being repeated three or four times every twenty-four hours. In *gastrostomies*, nourishment may be poured in through the gastric fistula. After intubation, it often becomes necessary to nourish the patient by introducing food through the nose. A Nelaton catheter is best for this purpose, attaching it to another tube. The catheter should be introduced through the lower nasal fossa and thence into the esophagus to the stomach. But very small quantities of nutrient should be introduced at a time. Beef-juice, milk, peptonized milk, and other liquid nutrient may be used in this way.

After *laparotomies* and especially after operations upon the genitourinary tract and rectum, the bladder must be emptied frequently by catheterizing. The bladder should never be allowed to go unemptied longer than eight hours, being sure to observe the strictest asepsis. In some instances, a self-retaining catheter will have to be employed; but, if possible, do not leave it in longer than forty-eight hours.

Important Symptoms After Operations

That we may better perform our duty to our patients in reference to after-treatment, we now will enumerate briefly some of the most important symptoms that occur after operation.

Vomiting has already been discussed. During the first twenty-four to forty hours after the operation, the temperature may rise until it reaches 102.5° F., but this should not be considered a cause for alarm, especially if thereafter it begins to decline. However, should it continue to rise, then the patient must be carefully examined for some possible complication. Often this febrile temperature is caused by absorption of toxic material, because the wound has not been duly dressed. Or, if there be a sudden rise of temperature

preceded by a chill, this is to be looked upon with grave suspicion, as presaging pneumonia or general sepsis. On the other hand, a rapid fall of the temperature below normal indicates secondary hemorrhage or shock.

A pulse of 100 should put us on our guard, while a rate of 120 is indicative of infection. A rapid, feeble or intermittent pulse points to secondary hemorrhage.

If much blood is lost, infusion of physiological salt solution should be resorted to; also the foot of the bed be raised. For support, hypodermics of whisky, digitalis, strophanthus, and strychnine should be given. Of these, strychnine, in doses of 1-60 to 1-30 of a grain, surpasses all the rest in restoring the heart's action after shock or hemorrhage. It should be administered every twenty or thirty minutes, until the pulse improves in strength and rhythm.

The control of serious secondary hemorrhage may necessitate the removal of the dressing, reopening the wound, finding the offending vessel and ligating it. When the artery or vein cannot be closed by ligature, the hemostatic forceps may be applied, and may have to be left in the wound for several hours.

One of the most frequent symptoms following an operation is pain, the intensity and duration will vary with the character of the operation; being generally more severe where the tissues have been badly lacerated. In cases where the pain continues or comes on a few days after operation, we should suspect infection. This may either be a superficial or a deep-stitch abscess or a sloughing of some part of the wound. Severe pain immediately after the operation is often due to too tight bandaging and will disappear at once when loosened. This is more often the case after laparotomies than after other operations. When it does become necessary to give something to relieve pain, morphine should be administered hypodermically.

A few lines on the indication for a change of dressing may here be added. Our experience has taught us that it is proper to dress a wound when there is some good reason for so doing. These reasons are generally the following: (1) Saturation of the dressing with abundant discharge; (2) soiling of the dressing by urine, vomit or feces; (3) the removal of stitches or drainage tubes; (4) pain, if owing to pressure or if of a pulsating character; (5) when secondary hemorrhage has occurred; (6) fever, if it points to some wrong in the wound; (7) if the dressing has been disturbed by a restless patient.

Frequent dressing, unless there are positive indications therefor, is sure to retard the healing process and to give the patient unnecessary pain, to say nothing of the danger of infecting the wound. Strict antisepsis should be observed at each dressing, just as much so as before or during the operation.

When no complications occur after operation and when union takes place by first intention, the first indication for a change of dressing will be to remove the stitches. Between the fifth and eighth day this can be done. In plastic operations on the face, the stitches can be removed as early as the third or fourth day. After laparotomies, the superficial ones may be removed on the eighth day and the deeper ones on the tenth day.

In dressing wounds, keep in mind that stitch-abscesses may form because the suturing-material has not been thoroughly sterilized. If any of these are discovered, remove the sutures at once, because they will be of no further service, while constituting a source of discomfort to the patient, and they may spread the infection to deeper parts.

Operations on the perineum and cervix require the most careful after-treatment. Constipation should be avoided in these conditions, because of the tension produced upon the parts.

I DOUBT whether anything in the world can beautify a soul more spontaneously, more naturally, than the knowledge that somewhere in its neighborhood there exists a pure and noble being whom it can unreservedly love. When the soul has veritably drawn near to such a being, beauty is no longer a lovely, lifeless thing, that one exhibits to the stranger, for it suddenly takes unto itself an imperious existence, and its activity becomes so natural as to be henceforth irresistible. Wherefore, you will do well to think it over, for none are alone, and those who are good must watch.—*Maeerlinck*

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—Doctor Gray continues this remarkable story of his adventurous and useful career in Mexico. In view of present conditions in that country, the installment following will be found especially interesting.

[Continued from page 54, January issue.]

The Revolution Versus the United States

IT SEEMS to me well to give a bird's-eye view of internal Mexico, as we pass along over the mystic haunts of this enchanted land. The political involvement now pending between the United States and Mexico should make this Latin-American country and its people peculiarly interesting to Americans, even those who have no material interest here, but rather a prospect of sending some loved ones down, for their unburied bones to bleach, in the marshes and barrancas, beneath the vertical rays of this pitiless torrid sun, should the intervention, at this writing (July, 1915) being discussed with the A B-C republics at Niagara not turn aside that impending menace. And you all may readily guess with what suspense of bated breath we people in these hamlets of the mountain-vales await tidings of that vital issue, while rebels hover, like the poison-breath of a pestilence, not far away, rushing out ever and anon, to pillage, and to murder those radically opposed to their pretensions, and seizing others, to be held for ransom. These brigands burned a rather populous town, 12 leagues from where I write, a few days ago, where a federal garrison had been stationed for a long time, contenting themselves with the pillage of the place and flogging those whom they most abhorred, instead of hanging them, as usual, and taking a few to hold for ransom. This is a life such as we also may reasonably expect to see some fine day.

I have very little sympathy with the American side of the pending conflict, knowing the sinister part American money played in initiating the Madero revolution. While the government and the people at large were not directly responsible, they had permitted the development of trusts more powerful than the government itself, whose sinister ramifications enabled them to cover up any transaction against the peace of this country. This fact, coupled with the conquest of Texas and the Mexican war which Texas developed, embittered all classes violently against the Americans and the government of the United

States; and this hatred was fanned by serial histories of Texas and the conquest appearing in the public press of this country, while still more intensified by inflammatory editorials and declamations and private discussions; and, the worst of all, it was all, surely, unvarnished truth. And right along, on top of all the old scores that had been partly healed and mostly forgotten, almost open facilities were constantly granted the rebels, and actively continued till very recently, if not up to this moment.

Conditions Behind the Rebellion

The principle involved in the revolution may be right enough; were but the revolution supported by legitimate Mexico, and the course of the rebels not barbarously contrary to all law of civilized warfare and common humanity. The government of Madero was a fraud and a cheat, in such monstrous degree that those who made his revolution a success revolted against him, almost to the last man, ere his government was fairly on its feet. The counter-revolution against Madero was justified, from almost any political point of view. The disposition asserted to have been made of him, when a prisoner, is a somewhat delicate hypothesis—however, he never would have quit the country alive, under any state of circumstances. The inside facts of his death may ever remain shrouded in mystery; at any rate, the responsibility for it will be difficult to fix.

The revolted federal army was, at the time, the ruling power in Mexico, save where the rebels against Madero took issue against his vanquishers, so that the great majority of Mexicans had to support the new government, *nolens volens*. But the remarkable coincident was, that the conquerors of Madero had to wage war against those who were arrayed against him, not because he had been killed, perhaps, by a questionable method, but because they themselves desired to become masters of Mexico; patriotism with them was an absent principle.

The utopian ideal of a "liberal republic" in Mexico, with her antithetical conflicting elements and unscrupulous party leaders,

ever ready to embroil her anew in the anarchy of bloody antagonism, might as well be abandoned once for all by philanthropic peacemakers. A government for the people and by all the people of Mexico is an idle nightmare-dream, unattainable for many generations to come. What Mexico needs, and what the interested outside world should want, is, a government that can establish and firmly maintain the peace—not a task for the wearers of kid gloves.

Numerous doctors dream of blooming fortune leaping from practice down here—a delusion it were well for them to unteach themselves; for, American doctors who have not stood at their posts, through foul and fair of these dark and bloody times, will get the cold shoulder down here after the war is really over; and then the country will be so poor for a long while to come that the ration of the doctor will not be oversumptuous. Antagonism for Americans has never, at any time in the history of the two countries, been so intense as it is now. As I have been here for half a century and served alike the rich and the poor, caring for the sick and wounded federals as well as rebels who came to me, with the same scrupulous attention, without pay, I have not had the slightest other inconvenience to cross my pathway from either side, and little, if any, unpleasant tilts with private persons, amid all the vindictiveness felt here immediately after the occupation of Vera Cruz by American soldiers.

The Triumph of Rational, Positive Therapy

The most important monuments I have reared in vindication of the merit of modern rational medication—accessible to Americans—are the result of my work on two big American rubber-plantations, namely, the Santuario, in the state of Chiapas, and the Chicago, in the state of Tabasco—two death-holes for long years ere my little granules and tablets appeared, to cope with the angel of death.

I did not pass much time in personal attention in the Tabasco practice, but I elaborately and carefully instructed American intelligence what to do, and how; and the results, in establishing uniformly good health and, concomitantly, a low death rate, are too incredible to recount. However, I was at Santuario almost every day for a year and a half, till the conditions were such that there was nothing for a doctor to do there; and there has been no other doctor there since then—now three years—the health and the nominal death rate remaining unchanged. I have been there but once (for two hours) in

three years. There are, besides, several smaller native places that have adopted my system of medication exclusively, and some of which I have not visited in five years; nor has any other doctor been called to attend the people. Also, there are private families within a league of where I write who were calling me frequently ten years ago, but whom I never visit now, and am very rarely asked by them for any medicine for some trivial trouble.

Supported by the foregoing eventualities, I am satisfied that this most sickly belt on this continent might be converted into a state of healthfulness closely approximating that of the Blue Grass belt of Kentucky. There is an appalling average death rate in the district, mostly affecting vicious children, who die as the result of eating dirt, salt or tobacco, and whom no medication can cure. I do cure many by threatening to put them into the graveyard alive, even resorting to the extreme of sending a little coffin-like box to the house. If they can be frightened to abandon their vice, they become well and fat within three months, without other treatment; under which, moreover, they would die but the sooner if the vice were continued. But most of the parents of such children never say anything about the trouble until they are dead.

Many little children are killed by excessive doses of vermifuge, when they have fever, rarely a week passing that I am not asked for help in such cases; and I save many of those seen in time. Yet, that is the first thing done when a child falls ill with a dangerous fever, often as I have admonished everybody to let the worms rest till the fever-danger passes. Frequently they have no worms at all.

The death rate also is considerably augmented by the deaths of men in drunken broils; these nearly always being peons. Many persons gorge themselves with some imprudent food, such as cracklings or salt fish, or green fruit, this resulting in indigestion, congestion, a violent chill, and a fever that kills within a few minutes, even ere a doctor can be summoned. A man died thus only the other day within a hundred yards of my office, and ere his wife thought he was seriously ill.

My Efforts to Prevent Sickness

My sole aim, in this sickly belt—apart from treating the sick—throughout the last score of years of my practice has been, to improve the people's health, and it has been a dis-

couraging uphill task; yet, there has been substantial headway made.

The rubber-plantations are radically exceptional to family experiments, there being organization and discipline and administrative authority to enforce sanitary regulations on the plantations, the success of which was dependent on a high grade of average health. While the interest in establishing and maintaining family health should have been still more urgent, it was indifferently neglected in nine cases out of ten; maybe not entirely in any case, yet, to an extent that the care was too defective to be efficient. Possibly about one family in ten took a really strong interest, and then had the reward of escaping the annual taxation of big doctors' bills, such as they had been accustomed to pay.

The practical eradication of epidemic yellow-fever in Havana and Vera Cruz, and the almost normal healthfulness established on the line of the Panama Canal prove conclusively the possibility of extirpating the deadly malarial and pernicious fevers of tropical Mexico and the Latin Americas, as well as the breakbone fevers of the Louisiana lowlands, under the rigorous supervision that secured such desirable results on the large scale just indicated. The task would be more herculean down here than in most other similar regions of the world, among a sparsely settled and imprudent people; yet, by no means impossible, when once put in vogue systematically, under the stern supervision of authority superior to the suasion of doctors.

Useful Concrete Water-Tanks

Galvanized iron roofs are becoming plentiful and steadily on the increase down here; while concrete building, that is now so extensively employed in the world, has simplified the question, long so difficult, of providing and keeping pure the potable water—a prime desideratum in the religion of health. The rain-water from such roofs is the purest in all the world. Concrete cisterns, covered with concrete lids, the water to enter from the roof through a fine strainer and the overflow covered with such strainer (to exclude insects) are practical, equal to jugs, and may be constructed of any desired capacity.

I have introduced the system here, having put one in connection with the roof and of a capacity of 1500 barrels. I built it round, making a mold of planks, in sections, adding two feet of wall at each pouring. I modified the standard proportions, in order to reduce the excessive quantity of cement and sand,

by adding stones, up to the size a man could conveniently handle. This I placed carefully into the mold, leaving a space between the stone and inside plank of some two inches, next carefully filled the vacant space with small stone, to the height of about a foot, then poured in liquid cement (2 1-2 parts sand and 1 part cement) until the stones were covered; then proceeded to fill in the other foot of the mold in the same way. After the concrete set, the form was raised. Thus, there remains an inward facing of two inches of pure concrete, and all the wall remains one solid stone, so perfectly the liquid cement permeates and fills the spaces between the stones. The wall is banded every foot with a 1-4-inch round steel rod, fastened in a species of steel ladder built into the wall, as it ascends, said ladder coming in sections, properly drilled for holding the rods. The rods should be covered with cement when the wall is finished.

Metal molds, 14 inches high, and metal roofs, constructed so as to receive the cement, used for building silos, but suitable for building cisterns, are listed in the big catalog of Montgomery Ward & Co. of Chicago. These are less expensive than lumber in America, and many different persons could use the same molds. I did not procure these, because of the heavy freight and duty. I refaced the wall inside with the cement and sand mortar, thus securing a perfectly smooth stone face. A pipe was built into the wall, at the bottom, to which water connections were attached I put in piping to water a 2-acre garden.

For a long time I have furnished families all their drinking-water, where there was fever almost continually before, but where months have since passed without a single fever case, while the general health seems improved otherwise. I have the water in my house, kitchen and bath, from the tank pressure; quite a comfortable convenience.

Doctors and their patrons might benefit themselves from this expensive experience of mine (cement here costing \$7 gold a barrel, and sand, \$2 a barrel—comparatively cheap), where water is bad, as in many sections of the southern states. There is no longer any question about impure water being an element of infection; maybe we do not know even to what extent. A big family across the street from me has been in the house two years, and they never were without fever the first year. The last year all their drinking-water has been taken from my tank, and they had not more than four cases of fever not one of which continued three days.

What Others are Doing

PITUITRIN FOR PROMOTING PARTURITION

E. Vogt, of Dresden (*Zeit. f. Geb. u. Gyn.*, Bd. 76; cf. *M. M. W.*, April 27, 1915), after a large clinical experience, maintains that there are no contraindications to the use of pituitrin in labor, not even the existence of nephritis, eclampsia or cardiac affections; none, except the one condition of a danger of rupturing of the womb, from forced contractions. Altogether, the author terms pituitrin "the best of all labor-pain incitants." He has found it particularly valuable in the presence of a narrow pelvis, and many a time it has rendered the forceps superfluous. Likewise pelvis-dilatation operations have lost much of their danger to the child. Hemorrhages before and after delivery are indications for pituitrin.

BIOLOGIC DIAGNOSTIC TEST FOR SMALLPOX

G. Jochmann asserts (*Virch. Arch.*, Bd. 216, H. 3) that he considers the diagnosis of variola positively established if, two or three days after the serum from a suspicious pustule has been inoculated into the eye of a rabbit, Guarnieri's bodies can be demonstrated.

OCCULT BLOOD AS A DIAGNOSTIC SIGN IN RENAL CALCULI

Eichhorst calls attention (*Zentbl. f. Inn. Med.*) to the importance of looking for occult blood (hemic pigment-cells—large round cells containing pigment) in the urinary sediment when suspecting the presence of calculi in the renal pelvis. These pigmented cells are transformed colorless cells.

ALCOHOL INJECTIONS FOR PRURITUS ANI

Having observed the lasting benefit following injections of alcohol in persistent neuralgic conditions, Harvey B. Stone (*Md. Med. Jour.*, Aug., 1915, p. 202), has given alcohol a careful trial for pruritus ani. Alco-

hol, 70 percent, is injected, with an ordinary hypodermic syringe, well through the skin into the area to be treated, being deposited directly under the skin, until the entire affected area has been infiltrated. The needle is never plunged in deeply, on account of the danger of causing paralysis of the motor nerve and loss of sphincter control.

This method of treatment has been very successful in Doctor Stone's hands. The results are obtained quickly, no dressing, stitches or other postoperative annoyance are required, and the effects are likely to be enduringly satisfactory. The injection causes intense pain for one or two minutes only before sensation is lost, but this may be prevented by a light general anesthetic or by preceding the alcohol injection with that of some local anesthetic. No subsequent treatment is required.

CONCERNING THE ETIOLOGY OF EDEMA IN NEPHRITIS

In opposition to the prevailing conception, according to which the edemas of nephritis rest upon an incapacity of the kidneys to separate the water, evidence is accumulating that at times extrarenal factors are the sole cause of fluid retention. The proof for this lies in the now sufficiently established fact that, in the presence of a nephritis, water drunken may be retained, while it is readily eliminated when introduced into the veins. The observations in this direction published by E. Magnus, of the Clinic of Wuerzburg (*Muench. Med. Woch.*, Sept. 22, 1914), as also those of Volhard, are of highest interest and carry conviction; and these, together with related ones, indubitably tend to demonstrate that certain particular functions of the kidney may be deranged, without affecting its activities as a whole.

In 1903 (and subsequently), Magnus points out, Gerhardt showed how in cases of acute (scarlatinal) nephritis sodium-chloride retention can be present, but, yet, this salt may promptly be eliminated when directly introduced into the circulation. Furthermore, Gerhardt demonstrated a divergence in

the time factor, in that the salt (ingested) retention lasted perhaps one or two days, while the albuminuria and cylindruria continued for weeks, with occasional nonrecession of increased residual nitrogen (rest-N) and abnormally diminished freezing-point, even though all uremic symptoms had disappeared for weeks.

Of still greater importance are more recent observations regarding the formation of edemas. A few years ago, von Nonnenbruch (*Arch. f. Klin. Med.*, 1913, p. 162) told of a case of edema when water excretion was intact; the underlying trouble, however, being decompensated heart action. Still, in another instance reported by Volhard ("Bright's Disease of the Kidney," Berlin, 1914), a similar condition directly involves the kidneys.

Edema, according to Volhard's views—based upon observations—is not a consequence of renally conditioned salt retention, but, rather, exclusively of a functional disturbance of the capillaries. Diminished ability of the kidneys to separate the water, this writer argues, merely leads to a retention of the fluid in the blood-vessels—intravascular water accumulation, or, a hydremia. On the other hand, edema is the result of extravascular water retention, the effusion of blood-water into areolar tissue. The demonstration of this is simple.

The patient drinks, at once, a large volume (say, 1 liter) of water. This failing of excretion, the kidneys may be at fault (intravascular retention); however, the fluid may, possibly, be retained somewhere else in the system and, thus, not get to the kidneys (extravascular retention). As a critical test, inject, at a subsequent time, a comparatively large volume (800 to 1000 Cc.) of physiologic salt solution into the veins, when it is sure to be carried directly and instantly to the kidneys.

This latter procedure definitely settles the point; for, if there is no renal insufficiency, urine soon will appear in proportionate amounts, thus disproving the accepted notion that nephritis necessarily makes the organs incapable of secreting. However, the kidneys may positively be incriminated only when results are negative after the introduction of water by both methods, by mouth and later intravenously.

So far the author's—Doctor Magnus' review of the situation, but he also has instituted experiments of his own, leading to the same conclusions; one of these referring to a woman suffering from acute nephritis. And

the results are striking. Related in few words, the facts are these:

The patient was given 1 liter of tea to drink, at once. Of this amount of fluid, 290 Cc. was excreted by the kidneys in the course of six hours, having a specific gravity of 1014 and a sodium-chloride content of between 0.28 and 0.36 percent.

At the second trial, 800 Cc. of normal salt solution was injected intravenously, with the following result: Urine voided (time: from 1 p. m. to 6 p. m.): After 2 hours: Cc. 350—sp. gr. 1016—NaCl 0.55 percent. After 5 hours: Cc. 550—sp. gr. 1017—NaCl 0.58 percent. Thus, a total of 900 Cc. of urine was eliminated inside of five hours, as against less than 300 Cc. in six hours.

Still, while nephritic kidneys have been demonstrated not necessarily to be incapacitated for secreting urine in proper amounts, this condition must not be taken for granted; for, the author encountered one case, that of a woman afflicted with chronic nephritis, in which neither the introduction of water by mouth or intravenously caused increase in the amount of urine. Here, then, there was a positive renal insufficiency accompanying nephritis.

Doctor Magnus mentions another observation in this connection. In a woman suffering from contracted kidney, associated with a light diffuse skin edema, there occurred a mild conjunctivitis, and in conjunction with this the existing edema of the skin took on an inordinate character as to severity and extension, altogether disproportionate to the conjunctival inflammation. With the recession of the latter, the severe edema likewise went down again. Supposedly, the eye trouble incited the aggravated edema.

From all of which it appears—to repeat—that in dealing with nephritis one must also consider factors lying outside of those organs.

SOME NEW IODINE SYNTHETICS

Sanasclerose is being recommended by some German physicians as a desirable form for administering iodine, in arteriosclerosis particularly. The tablets contain (*Ther. Monatsh.*, 1913, No. 1) potassium iodide, lecithin, iron, and so-called tissue-salts.

Iodostarin (Roche) is recommended as a desirable substitute for the alkali iodides. Its advantages are claimed to consist in an absence of disagreeable taste, and particularly that its continued use does not lead, unless exceptionally, to the unpleasant phenomena of iodism.

Lipoiodin, an organic iodine compound with a fatty body, presumably lecithin, is a new French synthetic, and is put out, with doctors' certificates (e. g., N. Ribollet, in *Jour. d. Med. Pract.*, 1912, No. 10), as a superior remedy in arteriosclerosis, exophthalmic goiter, actinomycosis, sporotrichosis, syphilis in its several stages, etc.

"Radioactive" iodomenthol is being highly praised by G. Dromard, Paris (*Zentralbl. f. d. Gers. Ther.*, 1912, No. 30), in the psychoses of tuberculous patients, where there are gastric intolerance and pseudo pertussis attacks. Neisser and others express doubts as to the claims made for this new remedy.

CLASSIFICATION OF SAPONINS FROM THE CLINICAL STANDPOINT

According to that eminent pharmacologist, Professor Kobert, of Rostock (*Riedel's Archiv*, Mar., 1911), the principles known as saponins cannot be considered a strictly chemically allied group; inasmuch as some of them exhibit a neutral and others an acid reaction (to which, moreover, Heubner, of the *Therapeutische Monatshefte*, is inclined to add alkaline members, naming solanine); while holding that all of them being glucosides is not at all a certainty as yet.

However, the one characteristic joining all the saponins, so called, consists in their hemolytic property and peculiar action upon fishes.

TREATMENT OF SOME PHASES OF VENEREAL DISEASES

A. Blumenfeld tells of the successful management of certain phases of venereal diseases in the Austrian army in the field, from which (*Wien. Med. Woch.*, 1914, p. 2473) we briefly abstract his statements anent a few conditions. Incidentally, this Red Cross surgeon seems greatly enamored of aluminum acetate for a variety of external lesions.

Gonorrhreal *epididymitis* the author combats with compresses wet with aluminum-acetate solution and the application of heat—for which purpose he employs sacks filled with hot sand. Occasionally heat cannot be borne, when ice generally proves grateful. As a rule, vaccine-therapy proves disappointing in this affection; however, it may be given a trial in otherwise obstinate cases.

Inflamed prepucce, in connection with gonorrhea, yields to embrocations with solution of aluminum acetate. At the same time, the penis is to be fixated upward against the

abdomen. The bandages are removed while the patient sleeps.

Buboës—inflamed inguinal glands may, as a trial measure, be treated by applying hot-sand-bags. In place of lancing, when pus has formed, it may be aspirated with a hypodermic syringe.

Ulcus molle—soft chancre—is thoroughly irrigated with hot water, then swab with a glass rod dipped in pure carbolic acid, and wind up by covering with iodoform-gauze; the latter being changed three times a day. The more costly odorless substitutes for iodoform may be ignored.

Gonorrhœal joint affections are amenable to vaccine-therapy (in fact, this absolutely is indicated), and without exception does good. As in the case of multiple folliculitis, Blumenfeld has recourse to the commercial polyvalent vaccines.

Without attempting an explanation of his observation, the author finds one single injection of a sufficiently large count to effect a cure; but, if this does not follow, then also a systematic vaccine-therapy will fail. While the dose he employs is determined by a given patient's condition of health, it ranges, ordinarily, somewhere between 2 and 3 cubic centimeters of his favorite polyvalent vaccine.

SULPHUR AS A PROTECTIVE AGAINST PEDICULI VESTIMENTI

During the past year, comparatively much space has been devoted to the subject of pediculosis, with special reference to the extermination of body-lice, and, yet, it is absolutely as nothing in comparison with the huge volume of the literature on this subject encountered in the medical and allied periodicals published in Germany and Austria-Hungary—not to mention the other bellicose nations. And, really, this problem of insect-pests is looming large in the domain of sanitation, since their agency as spreaders of disease is becoming more and more recognized. This knowledge already has greatly influenced medical practice, and our views regarding quarantining and the use of preventive disinfection, and further research promises almost completely to revolutionize the management of all zymotic diseases.

Naturally, the connection between typhus and recurrent fever and the body-louse has held the attention of medical men in the present war, with its unusual conditions; but, we here may deem that subject too remote for us to get interested in. This, though, is too narrow a view, for, the entire

problem is as yet an open one, nothing has been definitely settled, discoveries in one direction necessarily must affect research in other directions, while, moreover, no one can foretell what may befall ourselves with reference, in particular, to typhus fever. Hence, prolixity in this domain of parasiticides does not seem to call for any attempt at justification.

So, we find in the *Muenchener Medizinische Wochenschrift* for April 20, 1915, a supplementary note contributed by Geh. Sanitätsrat Dr. Eysell, head physician of the war-college at Kassel, in which precipitated sulphur is recommended as a prophylactic against body-lice. "Effective means for getting rid of body-lice," he writes, "we for long have known many, but (as I have said in previous essays as well as in my article, 'Die Krankheitserreger und Krankheitstüberträger Unter den Arthropoden,' in Mensel's 'Handbuch der Tropenkrankheiten,' 1913) reliable agents acting as protectives against lousiness we until now have had none." Having been generally misunderstood on the point of prophylaxis versus cure, and his advice having found little heed, Eysell once more repeats his contention, adding the warning that much depends upon a correct procedure.

To begin with, the material to be used is the precipitated sulphur, not the flowers of sulphur; and this because the latter is not a sufficiently fine powder, while the sharp crystals irritate the skin. On this score, an acquaintance suggested to the author the use of the extremely finely divided colloidal sulphur marketed as sulfidal; however, this was not any more effective, while its price virtually is prohibitive. And all that is necessary is, that the garments next to the body are thoroughly impregnated with the sulphur powder. The reason for this procedure, and also why the use of, for instance, sulphur-unguents (which, besides, are filthy) will not serve, likewise is set forth by Doctor Eysell.

The habitat of the body-louse is not, regularly, the skin of the host, but, rather, it sojourns in the vestimental covering of the person, and, in order to feed, the parasite protrudes its proboscis, and thus sucks its blood-meal while safely ensconced between the threads where they cross each other in the weave. Hence, the systemic designation, pediculus vestimenti, and "Kleiderlaus" (garment-louse) in German. This fact, further, explains in part why they congregate largely in those spots where the garments fit the

body closely. The importance of vestimental coverings of the body to the wellbeing of this parasite is seen when we are told by Professor Zlatogoroff ("Pathologie und Therapie") that observation has revealed that typhus-fever never attacked the naked negroes carried on the slave-ships, although they were fully subject to the other prevalent maladies. This long before the modern scientific discovery of the reason why.

In practice, the body-garment is turned inside out, some of the precipitated sulphur is loosely, but liberally, sprinkled over a small smoothed-out area, and then the powder is evenly rubbed into the texture of the fabric. Proceeding thus from spot to spot, the entire garment is liberally impregnated with the pediculifuge. Or, a small bag, made of two thicknesses of mull, is half-filled with the sulphur, and then the garment is pounded with it—very evenly, of course—following this with the brush, if desired. Also, a good powder-blower may be made to answer. Of course, socks, abdominal band, and neckwear must be equally treated. Plainly, impregnation of outer garments is useless. Ordinarily, a well-applied loading of sulphur will last about four weeks, although in the case of sweaty persons the process may have to be repeated every two weeks.

It seems supererogatory to add that anybody about to enter an infected region should protect himself in this manner before nearing the same; and this should apply to satchel, trunk, and knapsack, and the like.

Maybe the same encasement might prove serviceable against fleas and even bedbugs. Sulphur is less undesirable than insect-powder and larkspur. Experiments in this line, whether successful or otherwise, should be reported for the benefit of the "family."

AROMATIC SACHETS AS A CURE FOR PEDICULOSIS

To revert once more to the "lively" subject of body-lice, about the simplest and very best measure for getting rid of these purveyors of deadly diseases is proposed by S. Gross—who, indeed, deserves a monument if his contention proves true. This physician, at a meeting of the Medical Society of Vienna, made the assertion (*Muench. Med. Woch.*, Apr. 20, 1915, p. 552) that, in order to get completely rid of these parasites, all that is necessary to do is, to wear an aromatic baglet on the chest and between the shoulders. The lice, he declared, quickly will desert the wearer, while the young ones hatched from

the nits in the clothing perish from starvation. The nature of the oils is not indicated, but, we now know that anise, fennel, and clove have proved most effective. A little doubt arises when one reads that the speaker has honored this pediculifuge with the baptismal name of "texan" (not with reference to Texan lynchings, but derived from Latin "texo," "textile"); also, that these oils are "fixated" by the admixture of resinous substances and others of the ketone and aldehyde group, which tend to reduce the tension, hence, volatility, of the ethereal oils. The body of texan is talcum powder.

At the same session, S. Fraenkel stated having, by accident, discovered the powerful pediculicide action of anisol (not anisic-oil!), that is, methylphenyl-ether, a harmless substance obtained by methylizing phenol. It kills lice in ten minutes. However, B. Nocht and J. Halberkann have stated later that this substance leaves much to be desired and is excelled by the cheaper cresyl preparation.

The two authors last named (*loc. cit.*, No. 18), after carefully testing numerous methods, give the palm to p-dichlorbenzol, both for killing and keeping off lice. They put a Gram of it into little bags, left open, and distribute them in the bed, while the subject attaches them at various portions of the body—groins, armpits, neck, waist, and so on. It is promptly effective, while entirely harmless; but, being quite volatile, it must be renewed every few days. For bedding and clothing, they also use it in the form of a (very fine!) 10-percent spray, as follows: 10 Cc. dichlorbenzol, 43 Cc. burning-spirit, 43 Cc. carbon tetrachloride; 4 Grams green soap. The latter, to retard dissipation. It produces no unpleasant effect worth mentioning.

P-dichlorphenol ($C_6H_4Cl_2$) is a volatile solid having a mild, not disagreeable odor, and has been exploited, under the name of "globole," as a moth-exterminator. It is at present quoted at 1.80 marks, in ordinary amounts. Nocht and Halberkann are in charge of the Institute for ship and tropical diseases at Hamburg.

ATROPINE-THERAPY IN VAGOTONIA

G. Lehmann, of the Virchow Hospital at Berlin, has been making observations in 100 cases of disturbances of the vegetative nervous system, testing the reaction to adrenalin, pilocarpine, and atropine, the results of which he has published in the *Zeitschrift für Klinische Medizin* (Bd. 81,

II. I u. 2, Cf. *Muench. Med. Woch.*, 1915, p. 440). One observation made is, that the young are more sensitive to pilocarpine and adrenalin, while older persons show greater susceptibility to atropine. Another noteworthy conclusion, therapeutically, is this: Atropine many times will fail in vagotonic subjects; nevertheless, improvement has followed in a sufficient number of such patients as to warrant a trial with this remedy in appropriate cases, and, if benefit is seen from its use, to institute a vigorous and prolonged atropine-therapy.

SIMPLE WAY OF PREPARING BLOOD-SERUM

Doctor Rosenthal, of the military hospital of Goettingen, obtains larger amounts of blood-serum for laboratory purposes by the following simple procedure (*Muench. Med. Woch.*, Jan. 5, p. 30): Set the freshly drawn blood for one hour in the refrigerator, then, with a sterile platinum wire loop loosen the blood-cake from the sides of the glass tube, so that the lump is freely movable as a whole; again place the test tube with contents into the refrigerator, and then the blood is ready for centrifuging.

PURPURA HEMORRHAGICA TREATED WITH EMETINE HYDROCHLORIDE

Another interesting use for emetine hydrochloride has been found in the treatment of purpura hemorrhagica. A case of this kind is described by James C. Cole and Percy L. Querens in *The New Orleans Medical and Surgical Journal*, January, 1916 (page 473). The patient was a farmer, 52 years of age, who entered the Charity Hospital, New Orleans, on September 11, complaining of bleeding from the gums and reddish-blue spots on the body. The family history was negative.

His illness began on September 7. While working in the field he became dizzy, but not unconscious. He thought he had some fever. The next morning he noticed a small red spot, about the size of a dime, on the left shoulder. During the succeeding two days he felt better, but on September 11 he noticed that the gums at the margin of the superior incisor teeth were red and blood was oozing from them. He consulted a dentist, who scraped the teeth, but the bleeding continued. Soon after, small reddish spots appeared on the right forearm, these turning to reddish-blue by midday. A little later,

as blood still oozed from the gums, the teeth were scraped again and an astringent applied, but the hemorrhage continued, and reddish spots appeared on the chest, abdomen, thighs, arms, and legs.

Upon examination at the hospital, the most striking feature was bleeding from the gingival margin, the ecchymotic area extending almost to the frenum. When the patient held his head in the right position, the blood would drip from his mouth into a basin at the rate of 40 drops per minute. The gums on both margins showed advanced pyorrhea, and on the right edge of the tongue, near the tip, there was a small ecchymotic spot, the size of a pea. Examination also showed a large number of bluish-red spots, irregular in shape, ranging from the size of a twenty-five-cent piece to that of a dollar, covering the chest and abdomen, while the arms and thighs were covered with purpuric spots of smaller size, and the forearms and legs showed numerous petechiae, pinhead in size and larger. The vital organs were found to be sound, and the urine negative, except for a few hyaline casts and red blood corpuscles.

Application of glycerite of tannin was made to the teeth, but without effect; then a 1 : 1000 solution of adrenalin chloride was substituted, which seemed to alleviate the condition slightly. Calcium lactate was given in 15-grain doses every four hours, but without effect. Therupon emetine hydrochloride was administered intramuscularly, in a 1-2-grain dose. Almost immediately a hematoma formed at the site of puncture. The same result followed when it was injected into the other arm, eight hours later. The physicians now began intravenous administration of the emetine, 1-2 grain being given directly from the ampule, undiluted, into the median basilic vein. Only a slight ecchymotic spot formed at the site of puncture, and accordingly the injection was repeated six hours later.

The following day improvement was noticed in the condition of the gums, and the number of ecchymotic spots on the skin failed to increase. Accordingly, the drug was continued in the same dosage, twice daily, being injected intravenously alternately into the right and left arm. This treatment was continued until ten doses were given.

Improvement seemed to be almost immediate. The disease ceased to spread; the patient's general condition improved; he felt better, and at the discontinuance of the treatment all symptoms had absolutely disappeared, so that on September 21, 10 days

after admission, the patient was able to leave the hospital, showing no signs of the original condition, while the pyorrhea manifest on entrance appeared very much improved. After the second day the temperature did not rise above 98.4° F. and the pulse 86.

ARREST OR PREVENTION OF GANGRENE OF FROZEN OR CRUSHED FEET

Gangrene (mortification, necrosis, death of the tissues) is a direct result of a failure of nutrition, following obstruction of regular blood supply. One instance of this is seen in crushed hands and feet, where the digits may be hanging on by only a strip of vitalized flesh. A very successful procedure for preventing traumatic gangrene under such circumstances was introduced a few years ago by Noesske (*Muench. Med. Woch.*, 1909, p. 2419), who relieved the stasis and restored circulation by incising the tips of the fingers or toes.

Now, since frozen feet and hands were of such frequent occurrence among the European armies last winter, the idea came to at least two physicians serving in German field lazareths to apply Noesske's approved treatment in cases of that nature; and it so happens that reports on these experiments appear side by side in the *Muenchener Medizinische Wochenschrift* (Prof. Arnold Wittek and Dr. Eduard Bundschuh, 1915, p. 416), the results in both hospitals having proved eminently satisfactory. A reference to these articles seems opportune.

Noesske's procedure for preventing traumatic necrosis of the nature referred to consists in making an incision, parallel with the nail and down to the bone, clear across the finger-tip, that is to say, and to the width of the terminal phalanx; also, similar slits up to 1 cm. in length are—or may be—made lengthwise on the sides of the digit. The idea is, that, the clogged obstructing veins now being out of the way, the centrifugal pressure in the arteries can then force fresh blood into and through the parts—the vivifying, nutrient blood current finding an escape out of the severed arterioles (bleeding).

Now, in the case of frozen (third degree) feet and hands, it is reasoned, the cyanotic discoloration occurs because the veins no longer carry away the devitalized blood, although for a while arterial blood continues to be pumped into the parts. In consequence, the parts become distended, and at last the arrested arterial blood also becomes

venous; whereupon, circulation having ceased, the tissues begin to die off.

However, the latter disaster—mortification—can be obviated if, as above indicated, the stasis in the terminal arteries and arterioles is relieved by affording the opportunity for the vitiated blood to be forced out and fresh fluid to flow through and nourish, and thus to keep alive, the tissues. From this, it is plain that the operation must be performed at the earliest possible moment, if it is to be crowned with success. These incisions, it hardly need be mentioned, cause no pain; hence, anesthetic measures are not called for.

As a rule, blood will not issue immediately after the incision has been made, at most "a droplet of dark fluid oozing out"; although, when the accident is of very recent occurrence, a little venous blood may, possibly, start to ooze out pretty soon, which then will grow in volume and eventually become arterial. However, Doctor Bundschuh states, this will happen only in superficial and absolutely fresh cases of freezing. Moreover, in one instance, that writer believes, restoration of the circulation was accelerated by massage of the frozen finger from the knuckle toward the tip. When, however, hours have passed—as mostly happens—stasis is complete and no blood whatever will come from the wound: then further measures must be adopted.

Under these circumstances, in order to prevent drying, with consequent closing up, of the wound surfaces, Bundschuh inserts tampons of gauze saturated with sterile oil (preferably camphorated), and then proceeds to draw the blood by means of suction. For the latter purpose, he employs finger-suction-cups or, when more than one finger is involved, a hand-suction-bell, applying not too great pressure. After from five to fifteen minutes—if the operation is successful—the tamponed wounds may be expected to begin to show a little dark blood, which, under continued suction, increases in amount and has a brighter hue; and, slowly, the zyanotic member assumes a more pinkish color. If now the suction-cup is removed, the bluish hue of the member is likely to reappear; nevertheless, the wound will continue to bleed slowly.

In like manner, each digit is treated in turn, while the suction-cups are to be re-applied as often as seems advisable, and on successive days for as long as need be. Of course, the oily tampons are renewed whenever necessary. Then, when gangrene thus

was shown to have been averted, sometimes the members were bathed in lukewarm water, which favored bleeding, but less profuse than did the cupping.

The same author did not always consider it imperative to cut to the bone when the damage was a superficial one, often more superficial incisions sufficing; still, in the more threatened finger-tips, deep incisions always are advisable. Obviously, he adds, these tamponed cuts across the finger-tips leave disagreeable scars; still, a person rather will take these blemishes into the bargain than lose his fingers or toes. Under his supervision, totally necrotic digits were severed only when demarcation had become fully established.

Bundschuh supplies no statistics; Wittek, though, gives these figures for the *établis* hospital under his charge: total of men treated who had some member frozen, 134; namely: frozen feet, 412; frozen hands, 9; hands and feet, both, frozen, 12; frozen ear, 1. While here we find mention of one instance of frozen nose (although no statement as to outcome is made), the other author encountered neither frozen noses nor ears, but, still, expresses full confidence in the value of his method of treatment.

As to details, beyond the cutting, Wittek does not mention either suction or warm bathing; in fact, says nothing about the difficulty in establishing flow of blood from the wound; but, he does say that directly after making the incision he applied collargol and, after the third day, some "indifferent" unguent—the text leaving to infer that he did nothing else. Possibly his cases principally were of a mild type, but, also, his complete successes seem to have been fewer, as indicated by the amputations.

Wittek also followed Noësse's method, but, in addition, made from 2 to 4 longitudinal incisions on the top of the foot, from the proximal limit of the discolored skin up to the basis of the toes. Sometimes he cuts similarly along the plantar aspect. The beneficial effect, he relates, became evident within twenty-four hours; the bluish-green discoloration and "glassy-cloudy" infiltration of the foot disappearing and the already indicated zone of demarcation moving distally toward the toes. Not once did it become necessary to amputate higher up than at the middle of the metatarsi, and then only twice in extreme cases. In the others, only toes, in part or wholly, were lost.

Various individual deviations from these types need not here be repeated. On the

whole, phlegmonous complications never occurred; victims brought in in a fevered state quickly became defevered, the necrotic auto-amputations leave a smooth, healthy, remarkably small granulating surface, and, altogether, this new method of treating frozen feet and hands has proven a preventive of many otherwise deplorable mutilations.

INTRAVENOUS INJECTIONS OF DIPHTHERIA-ANTITOXIN PREFERABLE

As theoretically probable and actually recommended by Rausch, more certain and rapid results are obtained from the administration of antitoxin-serum, for the cure of diphtheria, by injecting it directly into the veins, instead of intramuscularly, as is customary. This assertion is made (*Jahrb. f. Kinderh.*, Bd. 80, H. 3; cf. *Muench. Med. Woch.*, Jan. 5), by K. Alber, of the Hospital for Children at Bremen. Park of New York, holds the same opinion.

CHARACTERISTICS OF MYASTHENIA

Myasthenia gravis pseudoparalytica, also known as asthenic (bulbar), paralysis, is a still unexplained peculiar intense muscular debility attacking, more or less acutely chiefly young persons, and the clinical picture of which is referred to as the Erb-Goldflamm symptom-complex. While the affection is somewhat rare, the description of a striking case may be of interest. The patient in question was presented before the Medical Society of Erlangen by Doctor Koeniger, whose remarks we abstract from the *Muenchener Medizinische Wochenschrift*, 1914, page 2314. The subject is the 20-year-old daughter of a laborer.

Some fifteen months before, the young woman observed a slowly progressive tendency of her upper eyelids to droop, and gradually this muscular relaxation extended to arms and legs. Eventually there was developed decided palpebral ptosis, external ophthalmoplegia, and a masklike rigidity of the facial muscles; also, the muscles of the trunk, limbs, and (particularly) neck, shoulders, hips became very quickly exhausted, while the diaphragmatic and intercostal muscles exhibit a continuous highgrade weakness.

Early in the day, the patient is capable of walking alone and raising her arms, but fatigued rapidly, and after slight exertion it advances and attains to complete paralysis-like relaxation of all the muscles.

In the face of this severe condition, there is observable no atrophy, no degeneracy-reaction, no disturbance of sensation, no pain; further, there is present no hypertension, and reflexes of the skin, mucosas, bladder, and rectum are normal, although occasionally the Babinski toe-reflex is elicited.

Before the attack and in its first stages, the patient knew of no nervous disturbances, but from early childhood up to her fifteenth year she was troubled with cough and oppressed breathing, these attacks occurring [in puberty?] quite regularly every four weeks, and then for a few days running would cause aggravation. The author surmises thymic asthma. Catamenia appeared for the first time in her nineteenth year, then did not again show for a year; since then, though, have been fairly regular.

The blood exhibits a mild lymphocytosis. A diseased state of the endocrine glands cannot be demonstrated clinically, especially do we possess no certain sign for thymic enlargement. For all that, the author is convinced of a definite correlation subsisting between myasthenia and the internally secreting glands, in particular, the thymus and the parathyroid bodies.

Unfortunately, precisely with reference to the thymus the Abderhalden reaction is as yet inapplicable. Still, it is noteworthy that, after subjecting the thymus of this patient to the influence of the Roentgen-rays, a marked improvement of the myasthenic symptoms could be recorded.

Electrical treatment produces an intense myasthenic condition; however, in the author's opinion, this differs merely quantitatively from the fatigue-reactions occurring in other persons, especially the juvenile forms of "nervous" asthenia. Yet, this very fact may aid in tracing the etiology of myasthenia.

MILK AS A SOLVENT FOR SODIUM CHLORIDE

According to Stewart (*Amer. Med.*, Aug., p. 622), when normal saline solution is indicated and proctoclysis is to be applied by Murphy's drop-method, the ideal solvent for the sodium chloride will be found to be milk rather than water. Not only is the salted milk more readily retained within the rectum than the aqueous solution, but it has a very decided antihemorrhagic action, owing to its power of increasing coagulability. In bad cardiac conditions particularly, when hemorrhage is to be avoided, very happy results

frequently are obtained by the injection of a quart of salted milk into the lower bowel.

THE CAUSES OF INDIGESTION

A very interesting study of the histories of 1000 consecutive patients who presented themselves for the relief of chronic or recurring indigestion was submitted by Douglas Vanderhoof in *The Bulletin of the Johns Hopkins Hospital* for May (p. 151). This report embraces only patients whose chief complaint was of some disturbance of digestion. Each of these patients was carefully studied, the history of his complaint secured, and a complete physical examination and the necessary laboratory analyses were made.

The table prepared by Doctor Vanderhoof shows the causes of indigestion to be about as follows: appendicitis, 21.6 percent; cholecystitis, 11.7 percent; various neuroses, 10.1 percent; cancer of the stomach and intestine, 5 percent; chronic gastritis, 3.6 percent; affections of the kidney, 7.1 percent; of the lungs, 2.8 percent; of the heart, 2.3 percent; of the eyes, 2 percent; visceral ptosis, 3.4 percent.

The most striking fact evidenced was the large percentage of cases in which two surgical diseases, appendicitis and cholecystitis, were the underlying causes of the indigestion, and the small percentage of those in whom actual disease or disorder of the stomach was found to be present.

SURGICAL OPERATIONS IN CARDIAC CASES: SOME SUGGESTIONS

When it is necessary to operate upon patients suffering from a cardiac defect, the greatest complication to be feared, remarks Douglas H. Stewart (*Amer. Med.*, Aug., p. 622), is syncope. Consequently, the physician should be prepared to forestall fainting under such circumstances. Doctor Stewart lays special stress upon the importance of maintaining the respiratory function at its full capacity. As he points out, the heart is only part of the circulatory mechanism, the lungs being of equal importance with the heart.

Interference with respiration is one of the things to be considered first as a possible complication when making unusual demands upon a badly damaged heart. This interference begins at the nostril, which is the true intake for the air. To keep the nostril readily permeable, Stewart suggests the use of a few drops of adrenalin-solution, because of its

power of contracting congested mucous membrane; and he adds that it is a pleasant surprise to see the improvement in the color of the face and the character of the pulse following the application of this simple expedient.

The adrenalin may readily be applied by the anesthetist with a dropper or swab. Sometimes it is desirable to free the nostril by the application of cocaine, before the operation, maintaining action by means of an antipyrin-solution.

ON THE ABSORPTION OF BACTERIAL TOXINS

R. Kraus and B. Barbara, of Buenos Aires, have been conducting several series of experiments with animal charcoal as a remedy in various zymotic diseases, notably diphtheria, tetanus, and rabies. They have demonstrated (*Deut. Med. Woch.*, 1915, No. 14) that this agent acts by absorbing the toxins engendered by the pathogenic bacteria; hence, its remedial value, as proven, in cholera and dysentery.

DAKIN'S CALCIUM HYPOCHLORITE SOLUTION

Since publishing the formula used by Carrel and Dakin, as well as by others, for the manufacture of sodium-hypochlorite solution, we have received from some of our subscribers inquiries as to how this preparation is made. For this reason, we reprint herewith with the directions given by Dakin for the preparation of this solution:

140 Grams of dry sodium carbonate or 400 Grams of the salt in *clear* crystals (washing-soda) is dissolved in 10 liters of water, and then 200 Grams of perfectly dry chlorinated lime (improperly called chloride of lime) of full standard quality is added. (Only that sold in sealed cans should be chosen.) The mixture is well shaken, and after half an hour the clear supernatant liquid is siphoned off from the precipitated calcium carbonate and filtered through a plug of absorbent cotton. In the clear filtrate, 40 Grams of boric acid is dissolved, when the resulting filtrate is ready for use. A slight additional precipitate of calcium salts may occur slowly, but this is of no significance. This solution should not be kept longer than one week, at the most, since it rapidly deteriorates.

Already ready-made preparations of this antiseptic solution (or at least a very similar

one) are being offered for sale in England. No doubt American manufacturers will put something of the kind upon the market before very long.

NITROUS OXIDE THE SAFEST VOLATILE ANESTHETIC

There is no longer any question, if Dr. Charles S. Skaggs is right—as set forth in his paper in *The Lancet-Clinic* for September 18, 1915, page 247—that nitrous oxide, when administered in association with oxygen, is the safest of our volatile anesthetics, provided it is given by an experienced anesthetist. Doctor Skaggs does not mean to imply that nitrous oxide is the anesthetic of choice for all operations, but he does believe that with this agent the patient can thus, for a short period of time, be anesthetized with less danger.

Ether, declares Doctor Skaggs, is contraindicated as an anesthetic for tuberculosis patients; indeed, patients suffering from organic diseases of the lungs and kidneys, as well as from severe suppurative conditions, asthma, empyema or diabetes, frequently do not respond well to ether or chloroform. Nitrous oxide and oxygen, on the contrary, can be used in conditions like those named, with comparative safety.

TREATMENT OF BOILS AMONG THE SOLDIERS

That distinguished dermatologist, Unna, has been contributing, under the title of "War Aphorisms of a Dermatologist," a series of short articles to the *Berliner Klinische Wochenschrift*. Some of the suggestions are of interest to American physicians engaged in civil practice: for instance, the following on the treatment of furunculosis.

Since baths and soap and most of the approved methods of treatment of boils are out of the question in the field, Unna recommends, emphatically, cauterization of all individual furuncles. When this is not practicable, he suggests the application of a paste consisting of ichthyol, kaolin, and glycerin (in the proportion of 10, 20, and 5) and covering with an impermeable dressing. When this plasma is not at hand or there is much irritation, a paste containing sulphur, zinc [oxide or carbonate?—Ed.], calcium carbonate, and glycerin may be substituted. Soft mercurial plaster also gives good results.

Speaking of the individual boil, Unna advises opening with a perpendicular stab into

the center of the furuncle, remembering that the lesion has been caused by the penetration of cocci into the hair-follicle. For this purpose, he recommends his "micro-brenner" (evidently a very small electric-needle cautery) as the best instrument to use; next, the finest point of the Paquelin cautery or a sharply pointed steel needle that has been passed through the flame of a spirit-lamp. Treated in this manner, the pain and tension cease at once, and the part should become painless to pressure.

The advantage of this method of treatment over the old-fashioned crucial incision is, that the foci of the cocci are disinfected *in situ*, these alone being destroyed, and not also the contiguous skin.

NASCENT-IODINE TREATMENT OF X-RAY-ULCERS

Doctor Bogrow, of the Dermatologic Clinic at Moscow (*Arch. f. Derm.*; cf. *Ther. Monatsh.*, 1914, p. 667), has adapted, in a case of a severe x-ray-ulcer, Pfannstiel's treatment for lesions of the mucosa, the result of x-radiation. The principle is, to load up the system with an alkali iodide and then applying hydrogen-dioxide solution to the lesion; whereupon the iodide in the secretion is decomposed, with the liberation of iodine, which then acts upon the tissues in its nascent state.

Bogrow gave his patient 6 Grams of sodium iodide per day (6 tablespoonfuls of a 5-percent solution), and covered the ulcer with a compress of gauze which was constantly kept wet with a 3-percent solution of hydrogen dioxide containing 1 percent of acetic acid. The sore healed nicely.

THE TREATMENT OF CHRONIC INTESTINAL STASIS

In view of the recognition of the importance of intestinal stasis in the production of disease and disease-symptoms, it is desirable to keep in mind the most striking and important of its clinical symptoms in a typical case; and these we find epitomized by William Seaman Bainbridge, in a paper appearing in *The Lancet* (Oct. 2, 1915, p. 739), in the following manner:

1. Pain or discomfort, usually referred to the region of the duodenum and stomach, but also to portions of the large intestine.
2. Gastric discomfort, nausea, and occasional vomiting, these resulting from obstruction to the outlet of the stomach in conse-

quence of ulcer or cicatrization of the pylorus or duodenum, or constricting bands about the duodenum, in the neighborhood of the pylorus. These symptoms may be classed under the ordinary category of "indigestion."

3. Various symptoms which may be catalogued under the term "autointoxication", which Lane has described as "flooding the liver with a quantity of toxic material picked up from the stomach, duodenum, and small intestine, in excess of what the liver, kidneys, and skin are able to deal with." These vary according to the susceptibility of the individual.

Under this head of intestinal stasis may be grouped a most important set of individual symptoms and physical signs; among them the following: Blotchy appearance of the skin, which is cold and clammy, especially over the extremities; cold perspiration, which exhales an offensive odor; loss of fat; lumpy condition of the female breast; thyroidism, sometimes; tenderness over the ileum; mental torpor—in fact, the entire symptomatology generally described under the head of autointoxication. Headache, melancholia, inability to sleep, and sleep disturbed by unpleasant dreams also come under this general classification of the symptoms of the condition in question.

4. Constipation, in the majority of cases; although this symptom sometimes is replaced by attacks of diarrhea. In one instance reported by Doctor Bainbridge, looseness of the bowels was persistent and distressing and could not be controlled by any of the customary means.

Doctor Bainbridge is of opinion that patients who present a sufficient number of the signs and symptoms enumerated may tentatively be considered as suffering from chronic intestinal stasis. However, a Wassermann test should be made wherever there is a possibility of syphilis being present.

Doctor Bainbridge, being a surgeon, naturally advises resort to the knife whenever the diagnosis is unquestioned. On the other hand, our own advice would be, to exhaust every possibility of medical treatment before sending any patient suffering from these symptoms to the operating-room. There obtains in the profession a growing belief, well expressed by Paul G. Woolley in a paper contributed to *The Journal of Laboratory and Clinical Medicine* for October, 1915 (p. 45), that "the surgical operation for intestinal stasis is not justified except as a last resort." Woolley further adds: "There is no definite information in the literature to

show that surgical procedures, made for intestinal stasis, have been more successful than medical ones." Anthony Bassler strikes the same note in *The New York Medical Journal*. See editorial, this issue.

Many times relief can be secured through the use of mineral oil and a properly regulated low-protein diet. Many of these patients do well upon Bulgarian-bacillus preparations.

THE TREATMENT OF TETANUS

Tetanus is one of the serious medical problems of this war in Europe. This disease and gas-gangrene are the most dreaded of the wound complications; but the military surgeons are having such a large practical experience with these two terrible diseases that they should eventually be able to throw considerable light upon their adequate treatment. Thus, we find in the October 23 (1915) number of *The Lancet* a paper upon the subject of tetanus contributed by Sir David Bruce, surgeon-general in the British army medical service. Most of the cases he saw occurred during September, October, and November of 1914. There were a considerable number of cases in the months of April and May, but only very few in June and July, 1915.

The average length of time between receiving the wound and the setting in of tetanus-symptoms was ten days. The cases having a short period of incubation were more fatal than those of a longer incubation-time. Thus, in those patients showing a period of from eleven to twenty-five days before the appearance of symptoms, the mortality was only 39 percent, as compared with 66.6 percent in those in whom symptoms appeared within ten days. Among 231 cases reported, the mortality was 57.7 percent.

Antitetanic serum has not proven markedly effective; still, Bruce believes it the best remedy we have; while, according to him, there is no evidence that any benefit has accrued from carbolic-acid or magnesium-sulphate injections.

He sums up the treatment of tetanus as follows:

1. Place the patient in a quiet, darkened room, under the care of a sympathetic and capable nurse.

2. The wound should receive the best possible surgical treatment, so as to insure the prompt and complete removal of all septic products.

3. The intrathecal injection (that is, injection into the nerve-sheath) of at least 3000 units of antitetanic serum should be the treatment of choice. At the same time 10,000 to 20,000 units should be injected intravenously and subcutaneously. This procedure is to be repeated as many times as the course of the disease seems to demand.

4. Patients should also receive sedative drugs, notably chloral or chloretone, these to be given in full doses.

SOME INTERESTING EXPERIENCES WITH AMEBIC DYSENTERY

How large a percentage of the cases of amebic dysentery treated with emetine are permanently cured? What are the causes of relapses, and how may they be prevented? These are some of the questions raised by Nathan Barlow, in *The New York Medical Journal* (Oct. 23, 1915), who has treated more than 300 cases of this form of dysentery with emetine in Honduras, and observed it clinically in the Charity Hospital at New Orleans. Of the large number of cases attended, however, only 58 are found suitable for tabulation. From these, Barlow draws the following conclusions:

The percentage of complete cures is much greater in mild or moderate cases than in the severe ones. In the latter, there is severe ulceration of the intestine, which affords harboring-places for the parasites, while insufficient circulation prevents their being reached by the emetine. However, while there is a very high percentage of relapses in these severe cases, after a second course of treatment with the emetine, the percentage of cures becomes high, as a result of the improvement in the condition of the mucous membrane of the bowel.

If the course of treatment with emetine is a short one, the percentage of relapses is high. Therefore, Barlow insists that every patient should receive at least 1 grain of emetine daily for not less than ten days. If so treated, 80 percent remain free from relapse for seven months or longer. The course of the emetine should not be continued longer than from two to four weeks. If used longer, both emetine and ipecac are liable to cause irritation of the bowel, thus aggravating and prolonging the dysentery. Doctor Barlow prefers to inject the 1-grain daily dose at one time.

Cases of hepatitis and liver abscess usually remain free from either intestinal or hepatic relapse, partly on account of the more frequent treatment they receive.

The bowels should not be flushed too frequently. It seems wise, however, to clean out the canal at the beginning of treatment and every five to seven days thereafter, in order to remove any cysts that may be present. If there is marked diarrhea, opiates should be given in sufficient quantity to control it.

SERUM AND BLOOD TREATMENT OF HEMORRHAGIC DISEASE

Dr. Beth Vincent calls attention to the fact that, when treated by the older methods, hemorrhagic disease of the newborn is characterized by a very high mortality, and also that, according to various authors, less than fifty percent of the patients recover.

By the use of gelatin—which is employed widely in Europe and is highly recommended by some German writers—this mortality was reduced, in some very favorable series of cases, to as low as 8.8 percent, and one author reported five cases, with none resulting in death. Others deny the efficiency of gelatin.

Since injections of animal serum and of human-blood serum have been suggested, the mortality of this serious disease has been reduced materially, and it has been claimed that the injection of whole human blood was even superior to the use of the serum.

In an interesting paper, with case-reports, in *Archives of Pediatrics* for December, 1912, the author reports on her experience with transfusion of blood from human donors, according to which eight out of eleven patients so treated were cured, all eight being, at the time of writing, in perfect health and showing no abnormal tendency to bleed. Four other patients that were not treated by transfusion received, instead, injections of whole human blood. All of them died; but the author denies that the fatal result can fairly be taken as evidence that the method is ineffectual. The author considers transfusion the best means of treating melena neonatorum.

ROCKY MOUNTAIN TICK-FEVER

There are two sovereign remedies for Rocky Mountain tick-fever, according to W. L. Frazier (*Med. Rev. of Rev.*, Oct., 1915, p. 610), namely, (1) quinine bisulphate, to be given in 5-grain doses every three or four hours during the day, and (2) ipecac—or, its alkaloid, emetine. The quinine, he alleges, cuts short the course of the fever, while the ipecac controls its most serious and dangerous symptom, the hemorrhagic purpura.

Miscellaneous Articles

Nonsymptomatic Sore Throat, and Rheumatoid Pains

REGARDING the suggested symposium on sore throat, may I add the following observation that has been serving me in many practical ways? I have noticed that many obscure fevers and many vague neuralgic and myalgic pains have turned out to be caused by, or associated with, nonsymptomatic pharyngitis or tonsillitis and that these would disappear after swabbing with a 10-percent solution of silver nitrate, followed by gargling with Dobell's solution. My attention was first called to this treatment by Prof. Gordon Wilson, of the University of Maryland, and forcibly so, since I was the subject referred to in "case 111" in his series published in *The New York Medical Journal* for September 3, 1910, under the heading of "Diagnosis of Tuberculosis." This is what Wilson wrote:

"The first was in the case of a former interne of the University of Maryland Hospital, who gave the following history: Family history good and the past history negative, save for the diseases of childhood. For two or three years the patient had had mild neuralgic or myalgic pains in different parts of the body, but unaccompanied by sore throat, nor were the joints affected at any time. He had also had, during his year's residence in the hospital, mild indigestion, with attacks which simulated chronic appendicitis. He had had no cough or pulmonary symptoms, had lost a little weight (which could be ascribed to his hard work), and, in fact, was in fairly good health.

"He decided, however, to have his appendix removed before leaving the hospital, and was operated upon under ether as a general anesthetic; and there was found an adherent appendix, but no acute inflammation. The appendix was removed, and the wound closed, and the patient did well for two or three days following the operation, when it was noticed that he was having an afternoon temperature of from 100° to 101° F., a rapid pulse (110 to 120), a tendency to clear his throat, but no

cough or sputum; and it was feared that there might be a lighting up of a tuberculous lesion, as is so frequently the case following a major operation under a general anesthetic. The examination of the abdomen showed nothing to account for the rise of temperature, and the blood examination showed a leukocyte count of about 8000—which might well be considered normal. Careful examination of the lungs showed nothing abnormal.

"Then a complete routine examination was made, and there was found a bilateral enlargement of the tonsils, with some congestion, the examination otherwise being negative. The tonsils were then swabbed with a 10-percent solution of silver nitrate twice a day, and Dobell's solution was used at 3-hour intervals.

"Immediately following the swabbing of the tonsils, the temperature and pulse returned to normal, and remained so during the further period of his convalescence from the operation; which, I think, can be said to be therapeutic proof of the diagnosis of nonsymptomatic amygdalitis accounting for his symptoms and fever. This case would have remained undiagnosed, or at least incorrectly diagnosed, if a thorough routine examination had not been made."

The following bit of personal experience may be of some interest in this connection: At present, whenever I experience a neuralgic or myalgic pain (which usually is in the right knee, although at the time of writing it has appeared in my left shoulder), I request my partner—that is, my father, Dr. E. W. R.—to inspect my throat; and invariably there is found a condition of congestion. There are no striking symptoms, while the congestion disappears if I have the throat swabbed with the silver solution; if, however, I delay, there develops, in about two days, a mild pharyngitis, with the usual subjective symptoms. I have learned by experience that, as a rule, an incipient pharyngitis first manifests itself in my knee, in the form of rheumatoid pains.

Here is another case typical of the foregoing conditions:

In the summer of 1910, a man called upon me, complaining of pains in his back, which had occurred at different intervals within the last several years. There did not seem to be any indication of kidney involvement, although a much desired uranalysis was not made. The pain seemed to be worse when he was in bed or the bathtub, especially if the water was cool. There was no tenderness upon pressure over the spine; the pain was worse upon bending over, was not constant, nor, apparently, affected by damp weather. The man had had occasional attacks of sore throat, and, being questioned, he thought that possibly the pains generally were worse at those times. At this time, no subjective throat symptoms were present.

Examination revealed a chronic inflammation of the throat and the tonsils rather shrunken, of a reddish, or beetlike color, and shiny. The pharynx showed engorged blood-vessels, the uvula partaking of the same beet color as the tonsils.

Treatment consisted in swabbing the pharynx and tonsils with a 10-percent silver-nitrate solution and gargling every four hours with Dobell's solution. This treatment was followed by immediate improvement, the pains in the back disappearing in a very short time, and, when last heard from, there had been no return. Of course, there is a possibility of a recurrence, but this does not alter the point in mind. The diagnosis in this case is, chronic atrophic tonsillitis and chronic pharyngitis, while the subjective symptoms would lead one to think of lumbar myalgia.

These two cases are typical of many which it would be useless to relate, but all bear out Doctor Wilson's assertion that a routine examination is essential for correctly diagnosing these conditions; as, in fact, all conditions.

I cannot refrain from mentioning here that for the past two years I have been using calcidin in all acute conditions of the throat and respiratory tract. Whenever I have the slightest reason to suspect diphtheria, I aim to give antitoxin early and to settle the diagnosis afterward; but, whenever the throat trouble does not impress me as diphtheritic, I have found that calcidin seems to remove the condition remarkably fast, as, for instance, tonsillitis. In cases of the kind indicated, I supplement the calcidin with the silver swabbing, while in cases bordering on "quinsy" I give calcium sulphide to saturation.

All of these conditions being usually associated with intestinal intoxication, I add the sulphocarbonates after purging the patient.

JOHN W. ROBERTSON.

Onancock, Va.

WHY NOT THE SYRINGE—ANOTHER COMMENT

I have read with interest in December CLINICAL MEDICINE what Doctor Cannon, of Kidder, Missouri, says of subdermal injections, as also the editor's note. Especially was I interested in the statement that "the man who resorts to the syringe in chronic diseases can have, or should have, a perfect stream of patients coming constantly to his office." Yes, he *should* have, for this is the correct treatment. But, will he? I doubt it. Let's look at it from different aspects and consider locations, city and rural.

First: Since the general publicity given the Harrison antianesthetic law, the public associates the hypodermic syringe with "dope" and, erroneous as it is, it will be at least a full generation before people can be disabused of this deep impression, especially in country practice.

Second: In all quack advertisements, the public is warned against allowing the hypodermic syringe to be used; and it will read them, for, it loves the so-called "specialist." The latter is so very much better informed than the family physician; then, not only does he condemn the use of the hypodermic syringe, but, by the shrewd employment of such phrases as, "We never use the hypo," "a purely vegetable compound," "no minerals given," and such like, he molds public opinion, notwithstanding the fact that the very use of such expressions brand him (to the well-informed) as a quack of the deepest dye, as one who is pandering to the prejudices of the ignorant and one wishing to impress the public with the fact that all who give minerals and make use of the syringe should be avoided.

Third: The country physician's time is too much taken up "getting around" to stay in his office to attend to this constant stream.

Fourth: The city physician who would be bold enough to attempt to start this constant influx of patients by adopting the hypodermic treatment would, I fear, soon be set down as a crank and his patrons considered as dope-fiends; while the worst feature of it would be that his brother physicians would not endeavor to correct, but rather encourage that impression for temporary personal gain,

especially should the innovator be an old physician having a large practice and experience. Nevertheless, the suggestion by the editor is a good one, the method is correct, and possibly, whenever indicated, it could be adopted to great advantage in the city, by the man just out of college; but never, without great risk of losing his patronage, by an old, established practitioner.

I sincerely question the profitable application of hypodermic medication in country practice, for the reasons stated, as well as because of the fact that the people in rural communities are loth to accept new ideas of any kind, especially any deviation from the old routine of treatment where their lives are at stake.

So much for subdermal injections, and this brings to mind another thing.

Most medical-practice laws are promoted by city physicians, I believe. When are we going to learn that, no matter how practical and beneficial certain laws may seem to us, nine-tenths of them are impractical and even detrimental to the physician practicing in the country. I have practiced many years both in country and city, and I am convinced that few of the customs of either are applicable to the other.

It almost seems as though the principal object of most of the medical laws is, to retire the old physician. Whether this is because there are too many doctors for the amount of sickness, I cannot say; possibly it is because they are too critical and cannot refrain from passing judgment when they see young cigarette-fieids carry their forceps to every confinement-case and use it unnecessarily, tearing uterus and perineum, in order that they may become adepts in sewing them up, or, worse, that they may exact a larger fee. Little wonder that the old physician gets disgusted with modern obstetrics, especially in the country.

I am not condemning the use of the forceps—certainly not. The forceps is a splendid instrument when needed; but, I have seen it abused altogether too often not to take up my pen in defense of the young father who has had his marital prospects ruined simply that some young medico may become adept in the use of the tool.

That suggests several questions: How is a man to become an adept in the use of the forceps? How is he to become an expert obstetrician if he is not allowed to use the forceps except when needed, especially in the city, where many young men do not have four confinement-cases in a year, while

at least 90 out of every 100 deliveries should be made without resort to it?

What proportion of recent graduates who are permitted to go out and practice upon the unsuspecting inhabitants are qualified to use the forceps with safety to the mother and child? Answer: Possibly not one in a hundred; certainly not one in twenty five.

Young man, if you are going to be a general practitioner and desire to retain your families, study obstetrics, and study it well, so that you may know how to act in an emergency. Make the acquaintance and cultivate the friendship of the old physician. You will never find a better friend; and he will be a friend in need. In a few years, you will be able to help him oftener than he has helped you, and you can rest assured that he will appreciate you and call upon you often and send people to you when he is too tired to go. And in that way you will become an expert obstetrician before you suspect it. You learn the art by experience, if you have the counsel of one who has gone through the work.

Remember, that it is natural for women to give birth to children without instruments being used—and simply because the woman wants you to employ the forceps is no reason why you should do so. And, if you expect to get experience by practicing upon your friends in private practice, you will soon have neither friends nor practice.

Let us hope that the much that has been written on "twilight sleep" (I do not like the term!) will do much to obviate resort to instrumentation. Suggestive therapeutics can be used to great advantage in these cases. I once unintentionally hypnotized a primipara and delivered her of a fine baby, without her feeling a particle of pain, notwithstanding she obeyed every word, even to getting out of bed and having a labor-pain standing at the foot of the bed and with her eyes open, in order to change the position of the child's head. It is astonishing what can be accomplished by suggestive therapeutics.

W. H. HOPKINS.

Norwood, Ohio.

[I like good critical papers like this one. They help to clarify the mental atmosphere. Of course I don't agree with everything Doctor Hopkins says, particularly with his remarks about hypodermic medication. It is hardly necessary to say that I am not advocating giving every office patient a "shot" every time he comes to see the doctor. That would be foolish, and would do harm. I am urging,

however, every physician to build up an office practice, and as early in life as possible. It may be impossible to "teach the old dogs new tricks"—but don't be an old dog. The time will surely come when the hard country drives must be given up, and then it's a comfortable thing to have people coming to see *you* for the treatment of the "walking" ailments and the chronic diseases. Even in the country the average doctor can adjust himself, somewhat, to this vision.

Hypodermic medication may be a means—and a very useful means—to that end, to be used in association with hydrotherapy, electricity, refraction-work, and the very best of internal medication to cure people who otherwise would desert you for the specialist in the great city. We know now that splendid results can be obtained with bacterins (which are given subcutaneously), with emetine, sodium cacodylate, with the iron tonics, and a score of other remedies so used. It will be very easy for you to dissipate any lingering fear of "dope" from the minds of your patients, if you treat them tactfully.

But enough of this. With Doctor Hopkins' views regarding legislation I am largely in accord. It is being overdone, and by men who have a very feeble conception of the responsibilities and difficulties of the country practitioner. It has been the constant effort of CLINICAL MEDICINE to rouse the profession to the importance of this matter.—Ed.]

APOMORPHINE FOR STRYCHNINE POISONING IN A YOUNG CHILD

The victim in this case was a little girl 3 1-2 years old, who was burdened with a hereditary luetic taint. Her father was Italian, the mother was American. The child found on the floor some red sugar-coated tablets containing 1-30 grain of strychnine, and ate them, then told her mother about these "candies." The mother was not alarmed, but did give the child some castor-oil. One hour afterward (at 6 p. m.), while at the supper-table, the child was seized with convulsions. The father hurried to my office with the child, who, upon her arrival, was in a semiconscious state and in an opisthotonic convolution; and was emitting a low guttural cry.

I immediately gave the child a hypodermic injection of 1-10 grain of apomorphine (having been advised by telephone), not waiting to sterilize the needle and solution; then gave inhalations of chloroform. The convulsion ceased, but she had another in five

minutes. This also yielded to the chloroform. Another one occurred in about two minutes, when I started to make a rectal injection of salt solution. I now gave a second 1-10-grain dose of apomorphine, and soon the child had dropped into a sound sleep, from which she did not awake inside of one hour (at 8 p. m.), apparently all right.

The next day, an occasional twitch of the muscles was noticed, but otherwise nothing unusual took place.

No vomiting was produced by these excessive doses of the apomorphine, nor even a suggestion of nausea. Bear in mind that the dose was twice or three times the average amount for an adult.

WILSON D. WEBB.

Addison, N. Y.

THE EARLY TREATMENT OF DIPHTHERIA

Looking back over thirty-five years of private practice, I become aware of many changes in my own ideas as to what treatment to adopt in many of the cases coming under my care. Most marked and most satisfactory is the method I now employ for sore throat in which a membranous deposit is present. My emergency-bag always contains one or two tubes of diphtheria-antitoxin, so that I am able to start at once, at my first visit, the proper treatment. Almost without exception I inject 3000 units, then take a swab from the throat for making a bacteriologic diagnostic culture. The families of my clientele know my convictions as to the need of prompt treatment and, consequently, call me early. Locally, I employ a mild alkaline or saline spray, or a gargle if the patient is old enough; but I never apply any strong antiseptic or astringent. No matter whether the attack proves to be true diphtheria or septic sore throat, I feel quite safe with the one dose of 3000 units of the antitoxin.

In laryngeal or severe nasal invasions of the disease, I administer another dose of 3000 units very soon; that is, either at once or within twenty-four hours.

Rest in bed, liquids for food, early use of antitoxin, and cleansing of the throat with a mild lotion—not forgetting proper and "enough" elimination by means of calomel and a saline laxative—these constitute my main battery.

Most of the patients thus handled you may claim to have been "cured," rather than that

they "got well" despite the disease and—one might say—an expectant doctor.

THOMAS B. VAN ALSTYNE

Binghamton, N. Y.

PROTECTIVE VACCINATION AGAINST SMALLPOX

In the December number of CLINICAL MEDICINE (page 1140), an article on the protection afforded by vaccination refers to the prevailing opinion that there is a time-limit to its efficacy. But, also, may there not be a question as to the extent of protection conferred in a given case? Why do some vaccinated persons have varioloid, while others equally exposed are not attacked?

The article referred to goes on to say: "The inspectors of the New York Department of Health occasionally meet with persons who can be successfully revaccinated at the end of six months, although the shortest period of immunity conferred by vaccination, in the actual experience of the department, is nine months." And the conclusion arrived at is, that "the immunity conferred by vaccination at times is very evanescent." However, the question arises, whether that really is true. Was the effect of the primary vaccination evanescent or was it simply insufficient?

It is well known that the susceptibility to disease varies in different persons. Then, there are also degrees of immunity or in the amount of protection afforded by vaccination?

Some years ago, a patient of mine contracted smallpox. He was duly quarantined and a nurse was employed who had previously had the disease, as evidenced by a face abundantly pockmarked. Before the first patient was out, the nurse was taken sick, and he had the disease in typical form (although not severe) and was decorated with additional pockmarks. So, then, this man's susceptibility certainly was not exhausted by his first attack.

Following that episode, I made it a practice, for several years, to revaccinate all who were willing, within a year—most of them at the beginning of a school-term. A few "took" the second time, and one I vaccinated the third time without result.

Are we, then, warranted in telling anyone that he is "fully protected" after a single successful vaccination? In connection with the infectious diseases, we sometimes speak of a certain person as being immune, which necessarily carries with it the thought of entire absence of susceptibility to the disease

or poison in question. If once actually immune, what proof have we that it is ever lost?

G. V. R. MERRILL,
Elmira, N. Y.

[The article referred to by Doctor Merrill, is an abstract of a report of investigations by the New York City Health Department —Ed.]

STATE BOARD EXAMINATION QUESTIONS

In the January number, page 84, we printed a number of the questions asked at the California state medical examination, June 17, 1915, promising to continue the examination-questions in this issue. We little realized the amount of space which would be required, and in view of this we shall have to "adjourn" these for another month, at least, since we promised to give in this number the answers to the questions already printed. We are using what we can, but we find that we shall have to postpone the answers to the questions on chemistry, bacteriology and pathology, and *materia medica* and therapeutics, until the March issue.

Please let us know if you find these questions and answers interesting. Whether we shall continue this feature or not will depend upon the opinion of our subscribers.

ANATOMY AND HISTOLOGY

1. The lumbar plexus is formed by the anterior rami of the first three, and a part of the fourth, lumbar nerves, with the addition of a small branch from the twelfth dorsal. Branches go to the quadratus lumborum, psoas muscle, ilio-hypogastric, ilio-inguinal, genito-femoral, lateral cutaneous, obturator, and femoral.

The sacral plexus is formed by the lumbo-sacral cord, anterior rami of the upper third sacral and part of the fourth sacral nerves. The branches are the muscular, superior and inferior gluteal, small and great sciatic, internal pudic, perforating and cutaneous.

2. *Synarthrosis*.—An immovable joint, consisting of two bones, edge-to-edge. Example: The lambdoid suture.

Ampiarthrosis.—Two bones with an intervening cartilage, held together by ligaments, permitting of slight motion. Example: Vertebrae.

Diarthrosis.—A freely movable joint lined with synovial membrane and surrounded by ligaments. Example: Hip joint.

(b) The hip joint is a ball and socket joint, consisting of a head of the femur resting in the acetabulum and surrounded by capsular ligaments, the latter being reinforced by Y and other ligaments. The joint has flexion, extension, adduction, rotation and circumduction. The blood supply is from the obturator, sciatic, internal circumflex, and gluteal; nerve supply from the sacral plexus, the great sciatic and anterior crural.

3. The eighth nerve has two roots: the vestibular and the cochlear, the former terminating in the restiform body and the latter in the fourth ventricle. The first root emerges between the oliveary and restiform bodies, the latter winds round the outer side of the restiform. The two roots then unite, pass through the internal meatus and again separate to form the vestibular and the cochlear nerves.

4. The thorax is formed by the twelve dorsal vertebre, twelve pairs of ribs, sternum, and muscles and fascia attached to them. It is separated from the abdomen by the diaphragm and contains the chief organs of circulation and respiration, as distinguished from the abdomen which encloses the digestive apparatus.

5. The cervical pleura is the portion which rises into the root of the neck. The costal pleura lines the chest wall, being attached to the costal surface of the thorax. The parietal pleura lines the different parts of the chest-wall, of which the diaphragmatic layer covers the upper surface of the diaphragm, except on its costal attachment. The mediastinal portion is a continuation of the costal pleura from the sternum to the vertebral column. The pulmonary portion is the layer which invests the lungs, dipping into the fissures between the lobes.

6. (a) Turn the head obliquely to the opposite side. Acting together pull the head downward and forward. (b) Flexes the thigh and rotates it slightly inward. (c) Moves the scapula and elevates the rib. (d) Moves the arm in all directions. (e) Draws the head to one side or backward and rotates the scapula. (f) Extends the lumbar spine. (g) Moves the arm inward and backward.

7. Diagram.

8. The jejunum contains no special structures. The ileum has collections of solitary follicles, usually showing a germinal centre, known as Peyer's patches. The duodenum has a large number of tubulo-alveolar glands known as the glands of Brunner. The glands of the ileum are broad and the cells are chiefly of the goblet variety. There are no special structures, but one sees longitudinal bands and sacculation.

9. The internal coat consists of three layers: Endothelial, subendothelial and internal elastic lamina. The latter does not take a stain well and appears as a light wavy band. The middle coat consists principally of non-striated muscle-tissue with small fibres and some elastic fibres mixed in; often there is an external elastic lamina, but not so prominent as the internal. The external coat is thick, fibro-elastic tissue, sometimes containing longitudinal muscle fibre. This coat contains the vasa vasorum and the nervi vasorum.

10. Commences by the union of the superior mesenteric and the splenic veins. The latter unites with the superior mesenteric to form the portal vein. However, the portal system has for its tributaries veins from almost the entire abdomen and pelvis, all the veins agreeing closely with the terminal branches of the corresponding arteries.

11. The superior cervical ganglion lies between the internal jugular vein and the internal carotid artery. It is the largest of the sympathetic ganglia. The inferior ganglion, which is joined to the superior by the commissural cord, lies behind the first part of the sub-clavian artery, between the last cervical process and the neck of the first rib. The middle cervical ganglion is usually located over the inferior thyroid artery as it passes behind the carotid sheath. It is frequently absent.

12. The mammary gland is an alveolar-tubular organ composed of from fifteen to twenty individual compound-glands, each of which opens by its own duct into the nipple. Each gland consists of lobes and lobules interspersed with fibrous and adipose tissue. Each lobule consists of tubular or alveolar acini, whose number depends upon the activity of the gland, and which are lined by the simple columnar cells wherein the fatty globules of the milk are accumulated. The ducts are lined by simple columnar cells on a basement membrane.

PHYSIOLOGY

1. (a) Hemolysis is the breaking down of the red blood corpuscle and the leaking out of the hemoglobin. It may be brought about either by destroying the envelope of the corpuscle, or by disturbing the osmotic balance between the inside and the outside of the envelope. Under the first heading we have as causes certain chemical substances in the blood, e. g., ammonia, snake venom, chloroform, etc., and almost all infectious toxins. Under the second heading the entrance into the blood of anything that dilutes the serum. Under both headings come the blood of other species of animals which are hemolytic to different species. In order for hemolysis to take place, there must be present in the blood a hypothetical element known as the complement, which forms the connecting link between the hemolysin and the hemolyzed corpuscle.

(b) Leukocytes are supposed to be manufactured in the red marrow of the bone, and they are eventually disintegrated and utilized for the nourishment of the plasma of the blood.

2. Peristalsis is increased either by direct stimulation of the sympathetic nerves supplying the musculature or (what is much more frequent) by negative stimulation due to impairment of cerebro-spinal inhibition (diarrhea). Peristalsis is hindered by just the opposite nervous conditions (constipation).

3. Respiration is increased either by direct stimulation through the sympathetics or by irritation of the respiratory center in the medulla, as in fevers and toxemias, and by suspension of cerebral inhibitions, as in emotions; respiration is depressed by precisely the opposite conditions.

4. *Inhibition.*—The check action of the brain upon spinal and sympathetic innervation.

Diffusion.—The mixing of gases and of fluids in accordance with their atomic weight.

Osmosis.—The mixing of fluids through a semi-permeable membrane in accordance with their densities of saturation.

Diapedesis.—The transudation of the blood elements through the unruptured vessel walls.

Perimetry.—The measurement of the visual field.

5. The initial stages of growth are provided for by the small amount of nutrient contained in the ovum at the time of fertilization. Immediately on implantation the ovum absorbs nutrient directly from the uterine blood. Shortly afterward the chorionic villa burrow into the uterine membrane and the placenta gradually forms as a definite nutritional organ. The fetal and maternal blood do not come into actual contact, being separated by the walls of the fetal vessels. Nutritive material passes from the maternal to the fetal blood, and waste products pass in the other direction, by diffusion. Glycogen occurs in the placenta itself and in all the embryonic tissues during growth. No doubt the epithelial cells of the villa are the most active factors in the exchange of

materials. The kidneys may form urine long before birth, but the kidney functions of the embryo are doubtless performed chiefly by the placenta and the maternal kidneys up to the time of birth. The liver also begins its function early. In general, it may be said that for a long period the metabolism is principally performed by the maternal organism, but as term approaches the fetal tissue and organs begin to assume more independent activities.

6. Color blindness is generally assumed to be due to the absence in the retina of photo-chemical substances whose response to certain light waves is responsible for the color sensation in question. The details of this deficiency depend upon whether one accepts the Young-Helmholtz theory of color or the Hering theory. In either case, however, the absence of the substance or substances in question involves a blindness to the complementary colors. Thus, if a person be color blind for red, he is also more or less color blind for green, etc.

7. A reflex consists of a short circuit current through a sensory nerve, a spinal arc, and a motor nerve, to a muscle or group of muscles. If the spinal arc be in uninterrupted communication with the brain, the brain exerts a check influence upon the current and subdues the motor response. If this inhibition be removed by an interruption of the brain-cord path, the motor response is then maximal and the reflex is exaggerated.

8. The rods are supposed to be only sensitive to light and darkness and by their power of adaptation (regeneration of their visual purple) form the special mechanism for vision in dim lights. The cones are supposed to be responsible for the perception of color.

9. During the latter part of an inspiration the size of the brain is slightly increased, because of the rise of the systemic blood pressure. During the latter part of an expiration, its size is slightly diminished, for the opposite reason.

10. Sensations of hunger and thirst are due to different causes, according to the degree of the sensation. The earliest and most superficial sense of hunger probably has its origin in the peripheral nerve-endings in the stomach. The second degree of hunger is no doubt due to the general demand of the tissues for food and has its origin in various and complex nerve phenomena. There is still a further and profounder hunger which occurs under starvation, and is rather hard to explain.

Sensations of thirst are subject to about the same explanations, except that superficial thirst is due to the pharyngeal nerves rather than gastric.

11. Normally, the sources of uric acid in the body are the nucleins of the muscles whose breaking up produces uric acid as one of the end-products.

Uric acid is commonly formed in man from the dis-assimilation of more complex compounds, of which no doubt the acid phosphates are one of the principal types.

12. Section of a cutaneous nerve is followed by absence of sensation in the surface involved and presently by atrophy of the skin.

MANGIFERA IN DIPHTHERIA

In diphtheritic disease of the throat and nose, the specific tincture of mangifera is a

valuable addition to the usual treatment. In my little experience, when other treatment has failed to yield negative swabs, this remedy has done the work. The mangifera may be used as a spray or gargle, in the strength of 1 dram to 2 ounces of water.

H. K. SHUMAKER.

Flat Rock, Ohio.

[The editor will have to confess that mangifera is one of the many remedies with which he has had no experience. Perhaps other readers of CLINICAL MEDICINE can contribute "pointers" regarding its various uses. In diphtheria, antitoxin is the remedy to which we must tie our faith—but that doesn't mean that it is the only remedy of value.—Ed.]

A DOCTOR'S HOME, WITH PLAN AND PICTURES

The plan for the bungalow herein suggested is taken from the March, 1914, issue of *The Ladies' Home Journal*. The building stands on a double lot and faces to the north. The ground naturally slopes from the street



Front view of Doctor Knipe's home.

line back toward the alley; hence, I conceived the idea of utilizing a portion of the large basement for installing my automobile—as shown in the rear view of the bungalow; in pursuance of this idea, the natural slope was augmented by grading, thus enabling me to run the car into the basement garage almost on a level. This part of the plan I consider a most desirable feature, for it not only saved me the price of a new garage, but I also have the advantage of a warm room for the car in the winter time, because of its proximity to the furnace. And this means a great deal to me, as a physician, owing to the ease of starting a warm car, as compared with a cold machine.

Next, the two front porches are of equal size, and I have screened the one on the west for a sleeping-porch. As shown in the floor-plan, this porch opens into the front bed-chamber, thus making it very convenient to dress for bed in the chamber and then step right out on the porch. The convenience of this location of the chamber will be appre-



Back view of Doctor Knipe's home, showing basement garage

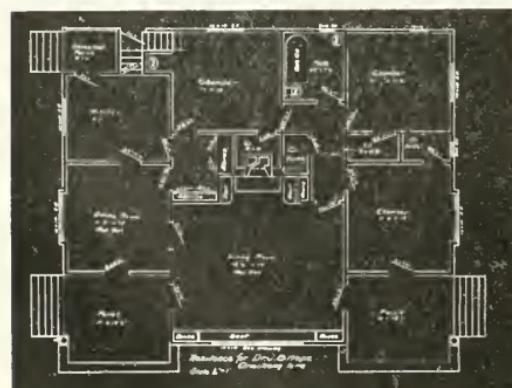
ciated when considering the ease of retiring hastily when the weather suddenly becomes inclement during the night.

The large well-lighted living-room, with the open fireplace, is one of the pleasing features that should not be overlooked in this plan.

The basement is of the same size as the house 40×44 , and is amply large for garage, furnace-room, coal-room, vegetable-cellars, and laundry.

The living-room and the dining-room are finished in oak, the others in natural fir.

The itemized cost of this bungalow, as built by me in the summer of 1914, is as follows:



Floor plan of Doctor Knipe's home.

| | |
|--|-----------|
| Excavating, grading lawn, and draying | \$ 112.85 |
| Foundation and cistern (labor and material) | 389.20 |
| Carpenter (labor) | 569.96 |
| Hardware | 125.39 |
| Plumbing (labor and material) | 251.10 |
| Chimneys and fireplace (labor and material) | 117.60 |
| Plastering (labor) | 90.00 |
| Lumber and mill-work | 1407.20 |
| Electric wiring and fixtures | 83.90 |
| Painting and decorating (labor and material) | 365.10 |
| Heating-plant, including labor of installation | 250.00 |
| Sidewalks and incidentals | 61.75 |
| Total | \$3824.05 |

J. B. KNIFE.
Armstrong, Ia.

THE PROGNOSIS IN PNEUMONIA-CASES

The death rate of pneumonia depends upon several factors. Thus, in general, the environment in all its phases has a large influence. Similarly, the patient's age is an important factor; the old being likely to die, while the young recover. Race also has its influence; statistics show that the disease is much more fatal in negroes than in caucasians. Furthermore, previous occupations and conditions of health play a role. Thus, it is well known that those who work in mines, in foundries, or in places where the air is laden with dust, overheated, dry, and impure succumb more often than those who live in more normal surroundings. So, also, the condition of the patient's bodily health at the time the pneumonia is contracted may be a strong factor in preventing recovery.

The statistics of necropsies gathered from various hospitals show that there existed extensive interstitial changes in the kidneys, ranging from 5 to 8 percent, in those who had died from pneumonia. This is easily understood when we remember the class of patients that are taken to the hospital. They include persons debilitated from sickness, poor food, hard drinking, and venereal disease; and then that other class of patients—robust-looking laborers between the ages of 40 and 60 years, whose organs show signs of wear and tear and who have in or through excess of one kind or another weakened their reserve power.

Very few deaths occur from pneumonia among robust, healthy individuals. This fact is forcibly shown by statistics gathered from the armies of Germany, which are composed of picked healthy men. Here, the death rate from pneumonia is as low as 1 percent; as calculated from the deaths occurring in 40,000 cases of pneumonia in times of peace. However, one year after the present war began, the death rate had risen to 6.4 percent; thus showing the influence of exposure and hardships of warfare.

In pneumonia, there are several causes or combination of causes that lead to the death of the patient. Apart from mechanical interference with the respiration and also certain possible complications, the fatal event is generally due to a slow toxemia. As a rule, the pyrexia and the consolidation of the lung-tissue are of secondary importance in this disorder, when compared with the existing toxemia. The degree of this toxemia does not depend upon the bulk of lung involved; and there may be present severe and even fatally ending toxemia when only one-half of one lobe is consolidated, while in another patient the toxemia may not be nearly as profound and, yet, one whole side be involved.

I remember a case of acute mania, that was due to toxemia, in a young man who had the disease but very lightly. Probably, had the disease been more severe, he would have received closer attention and the profound toxemia would have been avoided. It has been my experience that many of these cases which develop profound toxemia present great variations from the usual typical picture. There may be but slight cough or none at all, no expectoration, but slight or no leukocytosis, and but slight rise in temperature.

This poisonous toxemia may develop early in the disease and from the onset cause a gradual reduction in the vital powers.

From the foregoing, it will be seen that in most instances the prognosis of pneumonia depends upon our ability to recognize and treat the toxemia. If the action of skin, kidneys, and bowels are looked after—in other words, if we maintain therapeutic cleanliness, the cause of the toxemia will be greatly reduced. We should also be alert to the use of remedies that will lessen the toxin-producing power of the pneumococci and to those that stimulate the production of antibodies. Those best suited for this work are nuclein, lobeline sulphate, and calx iodata, with pneumococcus-bacterin.

C. W. CANAN.

Orkney Springs, Va.

EMETINE HYDROCHLORIDE IN EPISTAXIS. WHEN THE WOMAN WAS "QUILLED"

Six years ago, while visiting another city, my wife was taken with epistaxis from the right nostril. She had three visits from a physician during that afternoon, and on his third visit he brought another physician with him and they used the galvanocautery. This was the first nosebleed she had ever had.

Last week, on January 6, 1916, she called me to her room at 5:30 a. m. Blood was running freely from the nostril (right side), also from her mouth. I did not try tamponing the nose, anterior and posterior, as that did not do any good in her first attack, since the blood, after two hours, pushed out the cotton and the bleeding was as severe as before. I thought at once of emetine hydrochloride, and had in my vest pocket a tube purchased recently. I injected one 1/2 grain tablet into the thigh at 6 a. m., then made a strenuous effort to get a specialist to come out; but it was early, and when I finally raised him at his office, about 9 a. m., he was busy and could not come for a few hours, and by this time the bleeding was nearly checked. At 12 o'clock I gave the same sized dose, and that was the last of the bleeding.

My wife was very weak from the loss of blood, otherwise complained of nothing unusual. Our son came in the evening, about 10 o'clock. I had phoned him early in the morning. He is in the drug business at the town of Waterville, the other side of the Cascades, 200 miles away. I write of my son's coming that you may know that it was serious, for we were concerned at her first attack, and wife says this attack was more severe than the first one.

My wife's weight is 212 pounds, and she is quite active. For several years she has had spells that cause her suffering—not pain but distress in the region of the heart. If she tries to hurry when walking, there is the sensation of great pressure in the left side, under the heart, with difficult breathing, and faintness comes on. Often after we hurry to catch a street-car it will appear and I give her two glooin granules and two heart-tonic tablets (Abbott), and then she is relieved. During the attack of nosebleed, just described, she could not lie down because of the pressure of blood about the heart and in the head. She even felt better standing than in the sitting posture. I gave her about 90 grains of bromide of potassium in an hour, and her head felt better after that.

I shall always congratulate myself that I came to know the alkaloids. I would not like to do without them. It is not necessary to mention the different kinds, but I could give a good account of many of them.

Please excuse this long and rambling misive, but I wanted you to know of the emetic episode, and could not refrain from mentioning the heart trouble. There is no organic (valvular) lesion that I can discover.

In the January CLINICAL MEDICINE, just to hand, I notice "Arkansas" speaks of some of the peculiar notions of the laity, and mentions the old lady's advice to blow in the hands to expel an afterbirth. I have heard women say that—and seen them do it. It brought to my mind the story told by a friend of mine, of a young doctor who was unable to remove the afterbirth. He had another young physician called in, and he also failed. Then they decided to call "the old doctor" of the town. When he arrived, and learned the condition of affairs, his first question was: "Have you quilled her, gentlemen; have you quilled her?"

"Quilled her," they said, "what is that?"

"I'll show you," replied the old doctor. He placed some snuff in a goosequill toothpick, put one end into the woman's nose and blew into the other. A tremendous sneeze—and the afterbirth was induced to change its location.

A. I. MITCHELL.

Seattle, Wash.

THE DEATH OF A NURSE FROM TYPHUS AFTER HEROIC SERVICE

The officials of The American Board of Commissioners for Foreign Missions have just learned of the death from typhus of Miss Marie Zenger, a Swiss nurse who was a member of the band of nurses and doctors despatched from the Board's station at Sivas, Turkey, to aid in caring for the sick and wounded in Erzroom early in the winter. Although not under appointment by the American Board, Miss Zenger was at the head of one of the orphanages established in Sivas after the terrible massacres some years ago and was closely associated with the Americans in all their work.

Early in the winter the American Hospital in Erzroom as well as the buildings of the American Board's Boys' and Girls' High Schools were filled to overflowing with sick and wounded Turkish soldiers. When typhus broke out, Dr. E. P. Case, the Board's phy-

sician, sent for help to the American hospital in Sivas. Dr. C. E. Clark, with a group of nurses, an orderly, and a druggist, took the twenty-one days' midwinter journey, across three mountains, to Erzroom, which, by the time his party arrived, was one big hospital.

Miss Zenger, the Swiss lady whose death has just been reported, did heroic service in connection with the American buildings, of which she took charge, seeing that they were cleaned and put into running order after the first typhus outbreak was somewhat in hand. She later supervised the organization of a hospital which some Armenians established in Erzroom. The Sivas party had started back over their mountain journey—Erzroom having received other reinforcements of military doctors and helpers—when Miss Zenger sickened. They reached Erzingan, an outstation of the Board, where a German hospital is located. Miss Zenger was taken there and given the best of care, but did not survive the crisis of the disease.

Miss Mary L. Graffam, head of the American Board's School for Girls in Sivas, was with Miss Zenger at her death, as she had been with her during her service in Erzroom. In a letter describing some of her experiences Miss Graffam says, "I cannot, of course, speak freely of all we see and hear. I feel that I am a different person from the one who left Sivas two months ago."

THE TREATMENT OF SORE THROATS

On page 1085 of the December issue of CLINICAL MEDICINE I find an invitation to contribute something on the treatment of sore throats. I have been in the practice of medicine just forty-nine years and nine months, and have treated a good many cases.

My usual method is to secure an active bowel action by the administration of calomel, podophyllin and bilein tablets. I also dispense as a gargle, to be used every two hours, a saturated solution of potassium chlorate, 4 ounces, to which I add 2 drams of tincture of iron chloride. If there is elevation of temperature, I give the patient a mixture containing tincture of aconite, 1 drop, and spirit of nitrous ether, 20 drops, to each teaspoonful of water. This dose is administered every three hours. I have never seen this treatment fail.

Should suppuration of the tonsil ensue, which is very infrequent, I order hot applications of antiphlogistine. If the sore throat is associated with a general cold, I prescribe a

1-grain tablet of calcidin every one or two hours. Without "frills," this is a *sure* way to cure a sore throat. However, you must get in your work early to secure results quickly.

W. S. CLINE.

Woodstock, Va.

QUICK RELIEF FOR METASTATIC ORCHITIS

A man of 64 years, very obese, had a severe attack of mumps, which resulted in orchitis. He received the usual treatment, including ichthyl and other topical applications, but with no apparent benefit. The temperature mounted to 103.5° F. I then sent him 10 granules each of pilocarpine nitrate, 1-64 grain, and the defervescent granules, No. 1, with instructions to take one of each every hour till fever declined. I also sent calcium sulphide, 1 grain, and strychnine arsenate, 1-50 grain, one of each to be given every four hours.

Results were magical, and morning found the old gentleman free from fever and quite comfortable. Diaphoresis followed the third dose. Let him who thinks the alkaloids inert just try 'em a while.

J. J. CHAPMAN.

Nellie, Okla.

TAPEWORM IN A HORSE

Will you kindly inform me what to do for a mare with tapeworm. She has passed a number of segments, in fact, passes some with almost every bowel action. She has raised a colt this year and is now much out of condition. If possible, please give full directions, dose, and preliminary treatment.

C. E. JEFFREY.

Wickerville, Mich.

[We referred this problem to our friend and colleague, Dr. N. S. Mayo, whose comment follows:

"It is unusual to find horses, in the United States, infested with tapeworms, although there are three varieties that are reported as occurring in horses. All three are unarmed, and their life history is unknown.

"One of the best agents for the expulsion of tapeworm from the horse is areca. The dose is from 3 to 6 ounces of the pulverized nut. If the mare is in rather poor condition the smaller dose would be indicated. Before administering the remedy, diet the mare for

twenty-four hours, giving only thin bran mashes, no hay or other roughness, to empty the digestive tract. The pulverized areca nut can usually be given in a small amount of thin bran mash, preferably sweetened if she is dainty about eating. Give it in the morning, and follow in four or five hours with a brisk purgative of aloin, grs. 120; calomel, grs. 30; strychnine, gr. 1 1/4; or a ball of about 6 drams of aloes combined with 30 grains of calomel and ginger.

"This should bring the worms away. An important part of the treatment is a proper dose. This can only be determined by the size and condition of the mare. It is probable that she is also infested with round-worms. After giving the treatment indicated she should be well fed on laxative, nutritious but not bulky food. Avoid corn fodder, straw or coarse hay. Stock molasses is excellent added to her grain ration in sufficient quantities to secure a mildly laxative effect. She should also have salt to lick at will."—ED.]

THE ADVANCES IN THE TREATMENT OF CHOLERA

In view of the continent-wide war now in progress and the fact that Asiatic cholera already is a concomitant feature—with its threatening spread to transatlantic countries—it seems worth while to reproduce at some length the substance of an address recently delivered at Vienna by Professor Gustav Gaertner, and reported in number 23 of the *Militärarzt* (a supplement to the *Wiener Medizinische Wochenschrift*), as well as in *Das Oesterreichische Sanitätswesen*. Being in the nature of a survey, much of what is said naturally is general knowledge; some of the statements of facts, however, may not be so widely known. At any rate, a short review cannot be out of place at this time.

This invasion of the intestines—as of course is understood—by the cholera spirillum (cholera vibrio, Koch's comma bacillus) will give rise to disease-manifestations of varying intensity, and these, broadly, are grouped under these heads; namely: (1) Mild, or cholera-diarrhea. (2) A more pronounced type, choleric. These two forms are not serious and do not require treatment, provided the subject does not aggravate the attack by excessive and incautious eating and drinking—the larger number of transformation of mild cases into grave ones as well as deaths following the dietary sinning on

Sundays proving this latter contention. At all events, when cholera is prevalent, it is advisable to put to bed everyone complaining of diarrhea, and to order strict dieting. (3) Cholera gravis constitutes the third, the truly serious, division.

Cholera gravis—actual Asiatic cholera—generally sets in with great vehemence, and in most cases the dreaded cholera collapse supervenes largely within the next few hours, but never later than the second day; about two-thirds of the victims not rationally treated succumbing in collapse on the first or second day.

The symptoms characterizing this collapse stage of the attack may be explained entirely by the colossal loss of aqueous fluid drawn from the blood and tissues; and innumerable experiments demonstrate that all the grave phenomena of the collapse arise, in the first place, from an inspissation of the blood, and not from circulating toxins. Just as soon as the thickened blood has been rendered more dilute again, by means of infusion of water the frightful picture is changed as if by magic, the patient, already in the very jaws of death, all of a sudden seems entirely recovered.

Still, the cause underlying the blood thickening has not been removed by the infusion, if the diluent was merely physiologic (0.06 to 0.08 p. c.) salt solution. Both diarrhea and vomiting continue, even may become aggravated, and soon the blood is so viscid again that the heart is unable to pump it through the capillaries of the vital organs; cholera collapse ensues anew. Indeed, a certain ingenious writer has termed this form of replenishing aqueous fluid "Danaid" infusions (in allusion to drawing water into a sieve-bottomed vessel).

As a matter of fact, experience in large numbers of cases has demonstrated that physiologic, isotonic salt solutions hardly influence mortality at all. Only a few clinicians continue to use them, and then only in the shape of continuous instillation extending over several days. But, demanding uninterrupted supervision, this measure may be applicable in isolated, selected instances; in general practice it is inadmissible.

The reason for the continuous water evacuations in cholera is, that the presence, in the gut, of the pathogenic vibrios, as also of their metabolic products, induces a mighty pouring-in of aqueous fluid into the entire gastrointestinal tract; and this, obviously, is withdrawn from the blood. In this manner, as demonstrated by Rogers, several liters of water may be taken from the blood inside of a few hours.

As long ago as in the year 1893, the author of the paper under consideration, Doctor Gaertner, in association with Beck, showed that this exosmotic current just described can be reversed by merely supersalting the blood; or, in other words, the exosmotic process is converted into an endosmotic one, so that the blood actually absorbs and holds fast water from the intestinal lumen—yes, even from other cavities and the tissues of the body. The introduction of hypertonic saline solution into the circulation hastens the absorption of fluid from the gut. At the time an actual inspissation of the diarrheic contents of the intestines was shown to take place after introducing excess sodium chloride into the blood current; consequently, that the osmotic process was reversed. At all events, the abnormal outpouring of water into the gut can be completely arrested.

In view of the facts thus indubitably demonstrated, Gaertner and Beck then (1893) felt justified in recommending the intravenous infusion of hypertonic saline solution as a therapeutic measure in Asiatic cholera.

In the same year, Doctor Rosner, of Budapest, tried this method in a number of patients, and with remarkable results; thereafter, however, it was forgotten until 1909, when Rogers, in Calcutta, took up the measure in earnest and tried it on a large scale. The results reported by this famous authority on tropical diseases are considered truly overwhelming by Gaertner, Rogers reporting a reduction of mortality among his patients to 23 percent, from 60 percent under his previous treatment; and, while formerly victims almost invariably succumbed in a fully developed collapse, they now rarely die in that phase.

Since then, this therapy has been introduced in various hospitals in India, as also in Palermo, with equal success. It likewise was practiced during the second Balkan war, in Servia; where, however, Doctor Mueller, in association with Loewy, substituted hypodermoclysis for the intravenous injection of the hypertonic salt solutions, owing to the technical difficulties presented under the circumstances. Regarding this introduction of the solution into the subcutaneous cellular tissue Regimental Surgeon Mueller reported officially:

"These subcutaneous [hypertonic] saline injections acted excellently. The seriously prostrated patients revived, the hardly perceptible pulse improved markedly, vomiting ceased. The intense thirst now could be stilled with copious drafts of warm drinks. When, as would happen in severe attacks, a

collapse-like condition again developed, a second salt-water injection (subcutaneous) checked it; these injections occasionally being repeated on the second or third day, perhaps, at renewed outbreaks, always followed by a remarkable cessation of the liquid evacuations."

While the death rate from cholera was about 42 percent, it reached only 16.4 percent for the total of 31 patients thus treated by Mueller; but, excluding 2 cases of men brought in a moribund state, the deaths among the 29 amounted to only 10 percent. Doctor Mueller concluded his official report with this declaration: "I cannot conceive of a modern cholera-therapy without infusions of hypertonic salt solution."

Doctor Gaertner corroborates the foregoing statement by Mueller, that, in case the choleraic stools reappear, the saline infusions are to be repeated on the second and, if need be, on the third day. The effect of these saline injections seems truly marvelous; for, we are told, even while the infusion (the first time) is proceeding, "the clinical picture of the disease changes as if by magic. The discoloration of the skin disappears; the husky voice becomes more natural; the cramps, the oppression, the vomiting, the diarrhea, all let up; the pulse grows stronger, the dejecta lose their rice-water appearance and change to a normal color, and their odor becomes feculent."

For theoretical reasons, the author advises resort to these infusions as early as possible, and rather unnecessarily often than to risk being too late, in the belief that the attack is a mild one and might be curable without this measure. The operation is a simple one and, properly executed, can do no harm. Early interference only can prove the patient's chance of escaping a serious turn, as also of his more prompt recovery. It is of highest importance not to wait till thickening of the blood has begun, and this an early introduction of the water will prevent.

Upon theoretical grounds, further, to secure increased elimination by the kidneys, various additions to the saline infusion (e. g. pituitrin, to open the kidneys) have been suggested, from among which Gaertner gives grape-sugar (the true—not glucose!) the preference; the amount recommended being 3 percent to a 1.6 to 2 percent sodium-chloride solution; but as high as 9 percent of grape-sugar has been injected, without deleterious effects.

Beside the hypertonic salt infusions, Rogers favors the internal administration of potas-

sium permanganate, 1/10 to 7/10 Gram to 1000 Cc. of water; and also keratinized pills containing 0.15 Gram of the same chemical, 1 of these pills to be given every quarter hour until 8 have been taken, and half-hourly after that. His idea is, to destroy, by means of this powerful oxidizer, the vibrio-toxins in the digestive tract.

More recently, Stumpf has proposed the use of the white hone, large quantities of it to be ingested, suspended in water; and to be repeated as often as the drink is vomited. The intention here is, to coat the intestinal mucosa and thus obviate absorption of the toxins present. Several patients are asserted to have been favorably influenced.

A. G. VOGELER.

Chicago, Ill.

DEPARTMENT OF EXTENSION

As announced in the September number of CLINICAL MEDICINE, the little articles appearing in this department are to be handed by the physician to his patient. This literature is not to be substituted for the personal word of the physician, but represents the minimum of instruction and information for each patient. Probably the majority of physicians make a practice of giving an impromptu talk on whooping-cough, for instance, that will include a greater amount of information than found in the article below. If so, a great deal of time will be consumed in imparting this knowledge to each mother whose child has pertusis.

On the other hand, it is probable that in the daily routine at least some mothers receive less than this "irreducible minimum" of information. To standardize the doctor's work, we offer this little article, so that each and every mother can have at least this modicum of learning for the protection of her own and her neighbors' children. Anyone is at liberty to reprint this article, or we will ourselves supply reprints at a nominal cost.

SIMPLE RULES FOR THE PREVENTION OF WHOOPING-COUGH

Whooping-cough is caused by a certain species of germ which lives and multiplies in the delicate lining of the windpipe and bronchial tubes. The germs not only increase the formation of mucus, or phlegm, but also render the air-passages less able to throw off or eject such material. The cough is merely the body's effort to get rid of the germs and the excess of mucus.

For some obscure reason, the public tends to regard whooping-cough with a certain levity, as though it were in some degree a joke. Even those who regard it seriously often fail to realize its

very grave danger. Infants having whooping-cough show a higher mortality than do adults with either pneumonia, smallpox, typhoid fever or yellow fever. A reliable authority states that out of every 100 nurslings sick with whooping-cough, 40 die. If the age-limit is raised to 2 years, out of the 100 only 25 die. Whooping-cough rarely causes the death of a child above 5 years of age. The death record of a certain European city showed that during forty years whooping-cough had killed more people than had any quarantinable disease.

Children suffering from whooping-cough can communicate it to others from the time it makes its appearance until recovery is complete. It seems likely that danger of contagion lasts for a certain while after the cough has entirely disappeared. In order to catch whooping-cough, a child, as a rule, must come into personal contact with a person suffering from the disease. It is probable that the secretions and discharges from the nose and mouth are the medium by which the germs are spread from one person to another. It is possible also that toys or clothing may be soiled with discharges and thus convey the contagion; but such instances are rare. The time intervening between exposure and the development of the disease usually is less than sixteen days.

In order to guard against whooping-cough, young children should be kept away from crowds and should not be exposed to personal contact with any except persons known to be healthy. During an epidemic, great care should be exercised toward babies.

A parent whose child contracts whooping-cough should either keep the child at home or allow it liberty under careful precautions. If a child does not touch or play with other children, it can go out on the street without endangering the others. Coughing toward other children, exchanging toys with them or coming in close contact with them should be forbidden.

A vaccine against whooping-cough has been used by some, but the physician in charge of the case should be left free to use it or not, as he deems best. It is particularly advisable to give the best of care to whooping-cough patients under 2 years of age. The general strength of these little patients must be carefully saved. The treatment should be along systematic lines carefully followed out, with a view to saving the patient's strength.

THE FITZGERALD METHOD IN PAIN-LESS LABOR

Any method, no matter how improbable-seeming it may be, if calculated to render labor less of an ordeal, is worthy of consideration by physicians. Therefore, there may be something well worth "trying out" in the new method of inducing analgesia discovered by Doctor Fitzgerald, of Hartford.

A number of physicians have reported results, which, if confirmed by further experience, warrant us in believing that zonetherapy promises to be a boon to womankind.

To those who have had experience with zonetherapy in dentistry and in the relief of

rheumatism, lumbago, neuralgia, and other painful affections, mitigation of the pains of childbirth seems quite within the bounds of possibility. In any event, it will not be difficult to put it to the test, and then we shall see what we shall see.

Dr. R. T. H. Nesbitt, of Waukegan, Illinois, sends this very remarkable case-report:

"Last night I was called to attend what I expected would be my last case of confinement, as I have been doing this work for so many years that I intended to retire. From my last night's experience, I feel as if I should like to start the practice of medicine all over again.

"The woman I delivered was a primipara and small in stature. Her child weighed 9 1-2 pounds.

"When severe contractions began and the mother was beginning to be very nervous and to complain of pain, at which time I generally administer chloroform, I began pressing upon the soles of the feet with the edge of a big file, as I could find nothing else. I pressed upon the dorsal surface with the thumbs of both hands on the tarsal-metatarsal joint. I exerted this pressure over each foot for about three minutes at a time. The woman told me that the pressure on the feet gave her no pain whatsoever.

"As she did not have any pain, I was afraid there was no advancement. To my great surprise, when I examined her about ten or fifteen minutes later, I found the child's head within two inches of the outlet. I then waited about fifteen minutes, when I found the head at the vulva. I then pressed again for about one or two minutes on each foot, the edge of the file being on the sole of the foot and my thumbs over the tarsal-metatarsal joints as before. In this way, I exerted pressure on the sole of the foot with the file and pressure on the dorsum of the foot with my thumbs, doing each foot separately. The last period of pressure lasted about one and a half minutes to each foot. Within five or ten minutes, the child's head was appearing, and I held it back, to preserve the perineum. It made steady progress, the head and shoulders coming out in a normal manner. Within three minutes, the child was born, crying lustily. The mother told me she did not experience any pain whatever, and she could not believe that the child was born. She laughed and said, 'This is not so bad.'

"Another point that is very remarkable is, that, after the child was born, the woman did not experience the fatigue that is gen-

erally felt, and the child was more active than usual. I account for this on the principle that pain inhibits progress of the birth and tires the child. But, as the pain was inhibited, the progress was more steady and thus fatigue to both mother and child was avoided."

Dr. Thomas Mournighan, of Providence, Rhode Island, supplements this experience with several others—equally ridiculous or revolutionary—depending upon our point of view.

"1. Multipara—mother of four. Shortest previous labor, eight hours. Had had a laceration of uterus at first delivery. Had also one forceps delivery. When labor set in, she was given two aluminum combs to hold, and instructed to make strong pressure upon them, with a view to inhibiting pain, particularly in the first, second, and third zones. These combs were four inches in length and slightly roughened on the ends, so that the lateral surfaces of the thumbs could more effectively be stimulated.

"I was called at 4 o'clock a. m., and arrived at 5:05, when the babe had just been born. The woman told me that she had been in bed for only ten minutes. There had been only one severe labor-pain. This was when the head was delivered. No exhaustion followed, as in her previous labors, and she said laughingly, 'I believe I'll be able to get up this afternoon, doctor.' The afterbirth delivery seemed to be stimulated, and the pains were controlled by stroking the backs of the thumbs, first, and second fingers with the teeth of the combs.

"2. Primipara, 37 years old. This woman had a badly retroflexed uterus, which seemed to retard the advancement of labor, for she required five hours for delivery. She also used the comb pressures and, in addition, was provided with a rough-edged shallow box, upon which she pressed firmly with the soles of her feet. Four hours after delivery she had sharp afterbirth-pains, which were controlled by the stroking method before described. This seemed to give complete and satisfactory relaxation.

"There were three other cases, all of which responded equally well to treatment by means of zonetherapy.

"It should be added that, while the pain was inhibited, there seemed to be no diminution in the strength of the uterine contractions."

This may all sound foolish in the extreme. Yet, there are many other things equally foolish in the practice of medicine. And, if zonetherapy will do what its advocates claim for it, it may well be taken gently by the

hand, lifted out of the foolish class and placed among the ultra-ensible procedures—where it belongs.

EDWIN F. BOWERS,
New York, N. Y.

[Our readers may form their own opinions as to the value of the method. We confess to skepticism. However—try it.—ED.]

FROM A FLORIDA LUMBER-CAMP

If you will excuse the "picked-up-dinner" appearance of this letter, I will try to tell you something about the problems of a Florida lumber-camp surgeon; and if the



The Board of Health—Doctor Brigham and Superintendent Sullivan.

letter is not all that it should be, please remember that I am located 39 miles back in the woods, where we have

Trees in front of us,
Trees to the rear of us;
Blasting all 'round of us
Volleyed and thundered.

In my present camp, which is known as Blue Creek Camp, we have 25 white families and 200 colored people, all of whom are under my professional care. We live in boxcars, of a kind shown in the pictures which I am enclosing. In the Company's old camp (abandoned last May), the cars and shanties stood close together, and filth, dirt, old cans, and other rubbish were knee-deep around them. Slops and kitchen-waste were all dumped under and about the cars, until conditions became so vile that about 40 people were taken sick each day. As for malaria—that was fearful!

I used to visit this camp twice a week, coming from Alton, Florida, where the Company's mill is located. Finally I was persuaded to take charge of the camp and go there to live, stipulating that I be given



A Birdseye view of the Blu: Creek (Florida) lumber camp.

full power to clean up things. Inside of two weeks after arriving there the grounds about the cars were clean. All the accumulated filth was burned and the cans were buried. Then rules were formulated, and fines were provided for any infraction. These rules and regulations are still in force, and I can assess any person employed at the camp \$1.00 if at any time he allows waste to accumulate, or whenever I find a bit of paper, a tin can, a pasteboard box or anything like that around his habitation. After the third offense of this kind, I may order the offender to be given ten lashes. After one negro had received a whipping for carelessness of this kind, camp cleanliness was amazingly improved. If any of our workmen do not like my sanitation rules, he is at liberty to get out; however, everyone who stays must obey, or abide the consequences.

The result of this regimen is, that I have gained the reputation of having the cleanest

were made 30 feet wide along the fronts and backs of the cars and houses. Weeds and grass were cut, stumps and roots removed, and all ditches, ponds, and swamps alongside the tracks were kerosened. Also, the wood piles were located at definite points, and deep wells were drilled for pure water.

As a special feature, I must mention a hospital-car, provided at my suggestion. This car, I believe, is the most complete of its kind in existence, and, so far as I can ascertain, it is the only one owned by a lumber-camp. The furnishings are my personal property, and, as you can see by the illustration, I have in it a small drug store—in which, by the way, you can see, the alkaloids have a prominent part. Poisons and narcotics are kept in a small case—shown at the right of the picture. The window in the drug-room section is covered with a white gauze curtain. The car also contains an operating-room, and, moreover, is provided with running water.

When I get my automobile—which will probably be next month—I expect to be able to have electric lights in the operating-room, with current from the lighting-system of the machine. One end of the car, when finally completed, will have four beds. A 6x8 corridor lets in plenty of air and light. The car also is fitted with airbrakes. Finally, if anyone is injured beyond my skill to repair, we can hitch on one of our locomotives and rush him to a hospital at Jacksonville or Valdosta.

In a few weeks, we are going to move this camp to another location, and I am now laying it out carefully and hope to be able to reduce the amount of sickness even below the present rate. I am sending herewith some photographs of the camp to give you an idea of what we have. I think it a "model"—not meaning by that what the young woman found in the dictionary after someone told



Doctor Brigham's hospital car.

lumber-camp in all Florida. Better, the sick among our workers have averaged 3 1-2 persons per week since May 15, as compared with 200 taken sick in one camp of 500 population 15 miles from here, and 100 sick out of 300 people at another one.

When we moved to our present camp, I had all the cars and shanties placed lengthwise at 30-foot intervals. The "streets"

her she had a model husband; to wit: "Model—a small imitation of the real thing."

P. H. BRIGHAM.

Alton, Florida

[Doctor Brigham, like so many other resourceful men, is an extensive user of the active principles. Not only is he attracted



Operating-room in the hospital car.

to them because they are effective, but also because they are concentrated and easy to ship as well as to carry. This is a matter of much importance to a physician practicing his profession 50 or 60 miles distant from a railroad or express office! And that reminds me.

Do you know of the handicap under which such a man at present labors in *securing* his drug supplies? As matters now stand, it is illegal to send "poisons" by mail—and that word "poisons" has been ruled to include a large proportion of our most potent remedies. This law, or "regulation," should be revised. Doctors deserve fair play, and they should fight for it. Write to your congressman and to the postmaster-general and tell them how you feel about this.—ED.]

THE TREATMENT OF NOSEBLEED

In those cases of nosebleed in which it is necessary to call in a physician, there exists in the minds of patient and family a great deal of apprehension, amounting sometimes almost to a panic, this manifesting itself as hysteria or convulsions in very nervous persons; add to this the dread of anything like a surgical operation, and the coming of the physician is for patient and family a most nerve-trying ordeal. I have witnessed more than one bloody ordeal, where it was first necessary to hold the child by main brute force before the plugging of the nose (as it was called) could be completed. The appealing

tears of the frightened child hiding its face in the mother's bosom and clinging convulsively to her gown and the dictatorial words and actions of the doctor who has lost all patience are mental pictures not easily erased. Contrast this ancient relic of barbarism with my new method which has for many years been to me, and to the patient and friends, a very speedy and pleasant solution of this small but vexed question.

Prepare two pledges of cotton just large enough nicely to fill the opening to the nose. In the middle of each tie a thread six inches long. Ask for a teaspoonful of vinegar or some vaseline. The latter you should carry with you, but, if you can direct the attention to so small a thing as looking for and bringing the articles to you, you will help to break up the extreme tension. All the time you are preparing these things before your patient, assuring her—if it be a girl—that you are not going to cut or to use any instruments whatever.

Now take out of your pocket a long lead-pencil. Place one end against the middle of one of the cotton pledges and pull the cotton well down over the end of the pencil. Now apply vaseline quite plentifully over the outside of the cotton, then say to the patient: "See how soft and smooth this is; it won't hurt; now I'm going to push this up your nose just as gently as can be." And at once



Drug-room and office in Doctor Brigham's car.

you introduce the plement, carefully pushing up till you get even with the top of the palate. Now elevate the end of the pencil in your hand and push horizontally back and over the palate. The lessened resistance will tell you when the posterior naris is reached. Withdraw the pencil and begin to make traction on the end of the string which you have all the time held in your left hand. The resistance offered to your traction will show that the posterior naris is in opposition with

the pledget. The blood now all comes out of the anterior nostril in increased volume.

The cotton smeared with vaseline, in being passed to the posterior naris, anoints the whole nasal tract as well as furnishes an impervious backing to the posterior outrush of blood.

On the morrow, when this artificial obstruction is removed, the vaseline renders this an easy matter, for there is no rending of scabs and dried blood, for the coagulum and cotton are inserted with vaseline and the delicate mucous membrane is fully protected. The withdrawal of the whole mass is an easy work.

Vinegar is one of the best of styptics, and is always at hand.

Of course, there are bleeders, in whose case the bleeding will come from some other mucous surface. In that case, other means are necessary. For many years, in these special cases, I have used atropine, 1-50 grain, and usually let the patient chew the tablet between the front teeth and allow to absorb from the mouth. But when I was gravely assured by the oculists that there was a remote danger of increasing intraocular tension, and thereby aggravating or perhaps producing a glaucoma, I desisted and found in hyoscyamine (used in the same way) an entirely reliable substitute.

While atropine and hyoscyamine are isomeric and isomorphous, they are not the same; yet, in their action on the dilatation of the blood-vessels they show precisely the same results. But now that the king of hemostatics—emetine—which for half a century has been waiting in the wings of the theater, has unostentatiously stepped to the center of the stage into the full glow of the footlights, we have no further need of assistance in this line.

C. S. COPE.

Detroit, Mich.

MEDICAL SOCIETIES

The purpose of a medical society should be, to gather the medical fraternity together for mutual benefit, socially, professionally, and financially. Other organizations meet at stated periods for the same purpose. Miners, carpenters, merchants, barbers, bankers, all have their meetings and devise ways and means to better their conditions in life. They care not what view others take of their action, they act independently of outside criticism. If they agree to open their business places or

to close them at a specified time, they do that very thing, regardless of what others do or say. They are a unit in carrying out their decisions. If any of these organizations decide to raise the price of their product or to advance the price of their labor, they bring it up for discussion, vote on the proposition, back up their vote with their signature, then carry out their decision in the daily routine of their business.

But, how is it with this and most other medical societies? My observation is, that very little has been accomplished by our society. We meet and discuss subjects that, if carried out in our practice, would benefit, not only the physician himself, but his profession as well. Miners and carpenters meet, and say, "We must have so much an hour for so many hours' work." They all agree to it, and then carry it out.

Barbers meet and decide upon a certain price for their work. They carry out the change in price, regardless of what you or I may say. You go to a barber, a miner, a carpenter or a merchant and ask the price for certain work or for a certain product, and they will tell you immediately without hesitation. Go to another in the same line of business, and he invariably will tell you exactly what the other fellow said.

See? They are united. On the other hand, let a physician be called to a case, and he will get out his pencil and figure out the distance at so much a mile, and make it, say, \$5.00, then proceed to charge the patient \$3.00 or \$3.50. He thus brands himself as a coward and a deceiver. Confinement cases in our county are \$10.00 plus mileage. Yet, how few there are who carry this out. Some do, I know, but I know some who do not. Drugs lately have advanced many percent; still, who is charging 75 cents or \$1.00 for prescription instead of 50 cents? We keep on charging the same price to others and pay the increase ourselves, and for no other purpose than to run a skin-game on competitors and play busy, when it is very little money anyone of us, even the busiest, is making. Eight physicians out of ten who ever get ahead financially either have used trickery in getting their wealth, or else inherited or married it.

What has this or any other medical society done for you individually? Can you blame a physician for not belonging to the society when it accomplishes nothing for him? Show outside doctors that the society really does things, and every practitioner in the country will be glad to become a member and

attend every meeting. I consider it a waste of time to meet and accomplish nothing.

Here are a few suggestions as to how to improve our society as a whole and to benefit individual members:

1. Have a definite purpose to accomplish something at each meeting.

2. Put forth special efforts to have all physicians in the county present. (Give them something to do.)

3. Carry out in practice what is discussed at the meetings.

4. Report every meeting in your state medical journal. (Let our brother physicians know we are alive.)

5. What is said and done in a medical meeting should be held as secret and sacred as if said or done in a masonic lodge.

6. Let's do something, or quit.

This paper was recently read before a medical society by an Illinois physician.

"KIRK."

CALCIUM SULPHIDE IN GRIP

I have had excellent results with calcium sulphide in cases of grip, so widely prevalent at present; and in the details of one of these cases others probably will be interested. It is as follows:

The patient was a young man of 17 years, a clerk. When I saw him, at 7 o'clock in the evening, he had a temperature of 103.5° F.; respiration was 26; pulse, 120. He complained of headache, pain in the chest, and was coughing up large amounts of white frothy serum mingled with a little unclotted blood. There were bubbling rales such as I had never heard before, with a "whistling" sound in both lungs. Apparently a case of pneumonia.

I gave him granules of calcium sulphide, 1-6 grain each, one to be taken every twenty minutes, until complete saturation was secured; this to be followed by two compound cathartic pills. A cold compress was ordered placed over the chest until the fever fell. Belladonna every hour.

The next morning when I called, the right lung was cleared up; the headache was gone; pain in chest better; temperature, 99 degrees; respiration, 20. The left lung still emitted rales, but lessened. I gave belladonna and bryonia. On the fourth day, the lungs were cleared, temperature was normal, respiration also was normal; he had no headache, but a slight laryngeal cough had come on. Left some iodized lime, with orders

to let me know if the cough continued—I have not heard from him since.

How's that, brethren? But, wait, the boy told me of having had pneumonia five years before. This statement I doubt, although his parents insist it is true. I got pay for only four calls—however, I got a new family added to my list.

V. M. J.

Chicago, Ill.

[Doctor Candler tells me that calcium sulphide is acting beautifully in the cases of grip so common this year. He uses it in association with quinine and calx iodata. Another remedy giving most satisfactory results is a combined pneumococcus and streptococcus bacterin. Read Doctor Biehn's paper, this issue.—ED.]

CONFessions OF AN UNKNOWN PHYSICIAN

In the dizzy whirl of life's great battle, the surface of observable things attract the attention almost exclusively. The deeply laid plans and subtle intrigues of selfishness hide behind the suave manners that are cultivated in order to conceal them. We are all hypocrites—more or less.

The practice of the art of medicine affords opportunities, to those who wish to accept them, for unlimited deception, unrivaled immorality, and unbelievable treachery. These favorable conditions for viciousness tend to produce men who live double lives, lives in which the good shows resplendent to the casual observer, and thus the devilish part is obscured. The truth in its complete nakedness, the "altogether," if you please, seldom comes before us for our edification.

In the instance which prompts this little narrative, the frank admissions of the submerged part come from a physician who lived, apparently, as you and I live, who enjoyed the confidences of thousands, and who left the earthly stage of human acting credited with having added considerable to the sum total of general human happiness. He was called a good man and a successful physician. Peace be to his ashes! And this is his confession:

"The twilight of a fairly brilliant life now warns me, with its shadows, that eternal rest is not far away. I say 'brilliant' life, because the clouds of sorrow, sin, and self-condemnation have not shut out the sunshine of happiness to a very large extent from my day of life.

"Where I have infringed the restrictions of moral, social, and legislative law, in order to gain personal ends, I have freely offset these transgressions with kindly acts for the true happiness of others. The confines of my radius of personal action have been defined entirely by my whims and fancies. I have escaped apprehension simply through the use of clever conduct. Conscience, that guardian-angel, has not approached very near to me for many years, although she used to walk close by my side. Sympathy, Love, and Kindness have been companions whose friendship I have much enjoyed, although they never met Sincerity in my company. Virtue, Truth, Selfdenial, and Religion were all introduced to me by my mother when I was quite young, but they departed many years ago, and I have not seen their faces since. Today, by the mellow light of Time's lantern, I notice that, while Contentment is near my side, Regret is not far away, and Humbleness is ready to clasp my trembling hand. My memory is faltering, my step no longer sure, and the frost of life's Winter is on my brow.

"Early observations taught me that shrewd suaveness, apparent friendliness, and clever flattery were sure assets for a successful life. I learned the lesson well, and have cashed in abundantly.

"Now, as I hesitate to catch a breath and my old heart skips a beat or two, I wish to be frank and, speaking from a grinding experience of many years, tell you who read these words that my pathway is not the best one for you to follow. Scan it closely as I picture it in words, and let my warning serve to direct your steps to a better road.

"As I finished my medical course at college, I stepped forth, from the nicotine-scented amphitheater of knife carved seats into the arena of contest, like a king. My dreams were beautiful with the glare of glory, the gilt of gold and the flowers of gratitude. Trouble with her bastard children were nowhere to be seen, and around me stood proud Pomposity, condescending Philanthropy, and unexplainable Egotism.

"But, I had factors of success in my possession. I shook hands fervently with people whom I did not like, extended favors freely to those who treated me with disdain, and graciously continued to do professional work for those who smashed me in the face with gross ingratitude. My wife was a true helpmate, and whenever I failed to carry out this very practical program in the least she would kindly remind me of my omissions.

"I soon found that Integrity, while charming from the viewpoint of theory, needed a veil to make her more generally acceptable; so, I skilfully obscured her lovely face as I carefully extracted the cork from my placebo-bottle, smoothed down the ruffled feathers of family wrongs with the delicate fingers of Falsehood, and gently covered the nakedness of Truth with at least the leaf of a fig-tree.

"I was not a trained nurse, yet, I soon learned to 'nurse' my patients, so that the dimensions of my monthly statements assumed more satisfying proportions.

"I found that, when but a simple remedy was actually needed, the ledger would look better if I added to the treatment a few inoffensive tablets, a little gentle rub-on, and a mild laxative. The quite generally needed eliminant kindly served as a slip-by for Conscience.

"I was naturally very sympathetic, and occasionally, when I observed a hopeless invalid stepping painfully close to the grave, with no possible chance of evading it, it seemed an act of mercy to give him a euthanasic push, with my hypodermic syringe, into peaceful rest.

"Surgical work always appealed to my ambition, and, as I weighed the chances of individual success or failure, the possibility of mistakes and the misty prospects of the end in view, I reassured my growing doubts with the thoughts that coffins are seldom opened, and even that cold cash is warmer than a corpse. Like other amateur surgeons in small-town hospitals, I floundered haphazard through major operations, sometimes meeting with surprising success, and I kept up my supply of cases by dividing the fee with the doctor who was too nerveless to do the job himself.

"Morally I was naturally a clean man, but the straight path of virtue did not seem quite so easy to follow when circumstances crowded human instincts to the limit. For example, did it not seem kind and considerate when some winsome female who yearned for maternity, but who was denied by the adverse condition of an old derelict, received the treatment that her case demanded?

"I have always been a strict prohibitionist, publicly, but I have consumed quite a large amount of peruna and other potables that do not put a stain upon the dry ballot, so far as anyone can see.

"You who read this frank confession must not think that I take pride in parading these

misdeeds before you. Now, as the years decline and the gathering gloom of life's November separate the real from the shadows, I renounce and abjure all deviations from the spirit of right, and sadly come to my mind these words:

"Of all sad words of tongue or pen,
The saddest are these, 'It might have been.'"

A. D. HARD.

Marshall, Minn

TONSILLITIS — THE LOCAL TREATMENT

Here, very briefly, is my experience with tonsillitis and, in a general way, my course of treatment:

The diagnosis, as a rule, is readily made, of course. The duration of the attack will depend upon the treatment; in a large proportion of the cases treated by me, it is cured in from twenty-four to thirty-six hours. I proceed as follows:

On my first visit, I swab the throat with a 10-percent solution of nitrate of silver; and not only do I paint the tonsils, but also the anterior and posterior pillars and the uvula. These details are important. Internally, I give calomel, 1-6 grain every hour, for six doses (in the evening); also the following mixture:

| | |
|----------------------------------|---------|
| Tincture of ferric chloride..... | m. 30 |
| Potassium chlorate..... | grs. 10 |
| Glycerin..... | dr. 3 |
| Water, enough to make..... | ozs. 3 |

Directions: Give 1 teaspoonful every hour.

This is the promptest and most reliable cure I know of.

To prevent tonsillitis, always wear rubber overshoes when going out in damp weather.

V. P. PISULA.

Everson, Pa.

TUBERCULOSIS TREATED WITH EMETINE

I wish to report two additional cases of tuberculosis in which emetine gave excellent results. See my article in January CLINICAL MEDICINE, page 82.

Case I. Ralph A. I gave tuberculin, alteratives, eliminatives, and other remedies for a whole year. Some tubercle-bacilli were observed in the sputum and the feces. There was alternate constipation and diarrhea. Sometimes the feces were mixed with pus and blood, and this I had been unable to control until I gave emetine hydrochloride once a

day and, later, every third day for about two months. The stomach and bowels became normal, the tubercle-bacilli disappeared, and the man is gaining every day. I may save three-fourths of one lung and one-fourth of the other.

Case 2. Mrs. S showed a strong reaction under a test for tuberculosis. There was cough, emaciation, a daily rise of temperature, and dysenteric stools, which contained blood and pus. I gave codliver-oil and the hypophosphites, also one pint of cream every day. In addition, I administered emetine hydrochloride, one dose every day for twelve days, and then every third day for six doses. Result: No more tubercle-bacilli, digestion and elimination good. Is going to get well.

I am snatching time to write this when I ought to be in bed, but I want to let the "family" know.

T. M. STEWART.

Canistota, S. D.

[Whether or not emetine will prove of great value in tuberculosis, remains to be proven. As a rule, it probably is not wise to continue emetine injections more than two weeks without intermission.—ED.]

THE CRITIC AND GUIDE

The Critic and Guide comes out in its January issue in a larger and improved form. It now has incorporated with it our old journal-friend and brother, *The Physicians' Drug News*, thereby adding some 5000 new subscribers to its list of readers.

The Critic and Guide is one of the journals which I always read. I do so for several reasons: First, because I find so much in it with which I disagree; and healthy disagreement is one of the best mental tonics in the world. Another reason why I like *The Critic and Guide* is because Editor Robinson has the "punch"; he says what he thinks without reservation, and when he hits at an evil (or what he believes to be an evil) he strikes hard. Still another reason why I like it is because it discusses questions which most men are afraid to consider at all, and prominent among these are problems of sex.

In the new *Medical Critic and Guide*, there is a larger percentage than formerly of short, practical, helpful therapeutic suggestions. This will add enormously to its value and popularity. I wish every reader of CLINICAL MEDICINE could read the editorials on "War and Venereal Disease," "Too Much Cesarean Section," "Something About Smoking," and

"Excessive Drinking Among Women"—to mention a few only. But, really, there isn't an uninteresting article in the whole number.

MEDICAL CONTROL OF A GOVERNMENT IRRIGATION PROJECT

Although for four and one-half years the government town of Arrowrock was maintained 20 miles above this city (Boise, Idaho), while construction of the great Arrowrock dam—the highest in the world—was in progress by the United States Reclamation Service, there did not occur one death from contagious disease. This is a remarkable fact, say health-experts, when considering that during all that time there were employed approximately 20,000 men. Arrowrock camp had a maximum population of 1500 people; but, completion of the dam now finds it vanished like the Arab and his tent.

The government has about finished its work there, but the buildings erected, to house the superintendents, mechanics and laborers, have been razed and salvaged. What was once a magnetic scene of activity, as men, divided into three shifts, performed the work to wedge a massive concrete, arch-shaped structure between canyon-walls a mile high across the Boise River channel, blocking the flow of that stream into a reservoir 18 miles long, is no more. Today, the dam stands 348.5 feet above a bedrock of granite, to which it is anchored 91 feet below the river-bed. Impounded back of it is enough water to flood the entire city of New York and suburbs with a foot of water.

All through work on the dam, both in the excavating for it and on and about its sides, as it started to rise above the base, the loss of life was comparatively small during the four years it took to build it; less than a dozen men so employed being killed. The government exercised every care to safeguard those employed, both in actual construction and in the camp or town of Arrowrock itself.

All men before being employed were given a brief physical examination by the resident physician, for the purpose of determining their physical fitness for the work and to eliminate undesirables. Whenever doubt existed as to a man's condition, a more complete examination was made.

A well-equipped hospital was maintained and a competent physician was on duty to care for cases of sickness or injury. The resident physician was also the chief sanitary officer, and the camp-foreman carried

out his instructions in all matters pertaining to sanitary conditions or general prophylactic measures. The maintenance of all camp-buildings and grounds in a neat and sanitary condition was carried out under the direction of the camp-foreman. All bunk-houses, dormitories, and other buildings were swept and cleaned every day by the janitors and camp-men. These buildings were scrubbed out about every two weeks, and the bunk-houses and dormitories, including the springs and mattresses, were fumigated, by spraying with a liquid disinfectant, about once in two or three weeks. At frequent intervals, all sleeping-quarters were fumigated by burning sulphur.

Outside of the main camp were two hundred or more private residences, erected by foremen, mechanics, and laborers. In order that the general health and sanitary conditions of the whole community might be kept up to standard, health-rules were enforced that applied to all private residences as well. Airtight metal garbage-cans were provided about the camp and the residences, and all garbage was deposited in them, collected every few days, and burned. The mess-house refuse was fed to the hogs. The most scrupulous care was exercised in keeping the privies sanitary. All entrances were screened against flies, and, besides, these pests were caught in specially prepared traps. It has been humorously remarked by men who worked there that once a fly was seen on the premises.

Pure mountain-water was supplied from a creek, being carried in a flume to the camp, deposited in a tank, and thence piped to practically every building. A sewerage system with septic tank was installed, serving all buildings and discharging into the river below. Sickness was, in this way, held down to the minimum, and there were no epidemics of any kind. There occurred but one case of typhoid-fever, and it is believed that it originated outside the camp.

The camp had its commissary, its large mess-houses, serving as high as 60,000 meals a month; its club, reading-rooms, picture-shows, and the like, to keep those employed happy. Liquor was banished.

The net result was that the building of the dam, considered an engineering masterpiece in irrigation, was done in record time. Work started on it in 1911. Five years was the estimated time for completing it and to impound water behind it the year following. It was constructed, however, in four years and water impounded this season—the fourth

year. The dam derives its name from the fact that a high granite cliff on one side was used by Indians, in the early days, into which they shot their arrows to inform members of the direction they were traveling.

The total cost of the dam was \$5,000,000. The estimated cost was \$7,500,000. The water behind it is used to irrigate lands in the Boise project in western Idaho comprising 240,000 acres, all of which is owned either privately, by the state or under homestead entry by actual settlers. The dam weighs over a million tons. If placed a ton upon a 20-foot wagon, the line of wagons would reach from San Francisco to New York and double back to Cleveland; if piled 10 feet square, the column would reach a height of 29 miles. The water in the reservoir is 200 feet deep; it would submerge Boston 8 feet; Chicago, 2 feet, and the entire District of Columbia 5 feet deep.

All Idaho joined in the dedication of this dam, as completed October 4, with appropriate dedication-exercises. The ceremony attracted thousands of visitors from many states, and also many settlers from the project.

H. A. LAWSON.

Boise, Idaho.

INJURIOUS INSECTS

No doubt that many kinds of insects are not only unpleasant to the human body, but certainly also cause and communicate diseases. That this problem has not received more attention is because only a few men are devoting themselves to research-work of this nature. Metchnikoff, Patton, Margo, Strauss and Girault are among the most prominent workers on this subject.

Professor Metchnikoff of the Pasteur Institute of Paris states that bedbugs are concerned in conveying intermittent fevers anthrax, and also cerebrospinal meningitis. I remember about a small town of Austria where endemic gastric catarrh appeared and that bedbugs were considered the cause of it.

It has been found experimentally that mice, living as well as dead, very often are attacked by bedbugs. Certain observers (Strauss, Girault) claim that rats spread plague, septicemia and all kind of infectious diseases. Castellani mentions that in places where many flies exist diarrhea and dysentery occur. Flies also are the cause of some skin diseases. In my own immediate neighborhood I saw recently a case of erythema multiforme and urticaria attributable, no doubt, to a swarm

of flies. The patient was a child of 2 1/2 years, and as soon as the house was free of the pests the trouble was over quickly, without medical intervention.

The *cimex columbarius* causes what is known as "dog-disease." The patient complains of headache and constipation, experiences rise of temperature, the eyeballs become tender and there is a characteristic suffusion of the conjunctiva. Mild bronchitis, gastric tenderness, cramps, and epistaxis are the chief symptoms, together with a rash-like urticaria or erythema multiforme. The disease lasts two to four days and terminates by crisis, but convalescence is slow and there may remain a pronounced anemia.

Wellmann draws attention to the noxious larvae of certain coleoptera and lepidoptera, some of which may cause severe pain and skin eruption, while nervous symptoms may follow contact with stinging caterpillars. He has also a note on two species of myriapods, and states that their poisonous secretion probably is from the foramina repugnatoria located at the sides of the segments and which look like tracheal stigmata. Someone has had myriapods sent from the southern Sudan, some of which are said to be much dreaded by the natives, and these specimens are being determined by Professor Werner, of Vienna.

The *cimex rotundatus* is distributed throughout Europe and North America, and its bite causes terrible itching, general irritation, and, finally, eczema.

Ants spread cholera, dysentery, and enteric fever; and, indeed, all those diseases due to contamination of food. There is definite proof that ants convey the germs. Many interesting cases are mentioned in the literature, in which ants were known to act as disease-carriers.

S. R. KLEIN.

New York, N. Y.

DEATH OF DOCTOR MILLCAN

We are sorry to announce the death, at the age of 62 years, on November 28, in London, of Dr. Kenneth W. Millican. Doctor Millican had many friends in this country, where he made his home for a number of years. In 1897, he became associate editor of *The New York Medical Journal*, later, editor of *The St. Louis Medical Review*, and still later, member of the staff of *The Journal of the American Medical Association*. In 1911, he returned to London, where he became associate editor of *The Lancet*.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

THE following paragraphs conclude the excerpt from the address of President Cabot at the last meeting of the Mississippi Valley Medical Association, the majority of which was printed in this department last month.

Doctor Butler asks us to apologize for the shortness of his contribution to this issue. He has been suffering from the prevailing epidemic of grip and for a week or more has found it impossible to do literary work. His usual quota of the "good stuff" will appear next month.—ED.

Personally, I have an abiding dread of state-medicine in a democracy, because of my recognition of the essential inefficiency of democracy. Whatever may be the beauties of this form of government, efficiency is not among them; and, though I quite realize that it is possible to worship efficiency as a goal to far too great an extent, I also recognize that inefficiency in medicine may well prove a fatal defect. I can not construct any theory of state-medicine in a democracy which does not appear to me likely to ruin, not only the democracy, but medicine.

Therefore, I look forward to the development of group-medicine with the hospital as its center, such hospitals to be under the management of trustees who, it is to be hoped, will take their duties much more seriously than do most trustees of today.

It will probably be objected that this will involve the treatment of all patients in institutions, but this will not of necessity result, unless it be thought desirable. There is no substantial objection to the hospitals' staff making visits at any reasonable instance, without loss of the important advantages of medical grouping. It does not even seem to me impracticable to conduct country practice in sparsely settled districts upon a hospital basis. It would seem to me entirely feasible to use the towns and smaller cities as centers from which medicine should radiate. The younger members of the organization would do the work in the outlying

districts, living there, if necessary, but always keeping in close touch with their hospital-center and being promoted as experience and opportunity should dictate.

It would thus come about that the younger practitioners should have thrown upon them the more laborious work, while the older members of the group would occupy the positions requiring sounder judgment and fuller development, but neither the activity nor the enthusiasm of youth.

In this way we might preserve all that is best in competition for that scientific achievement. We could undoubtedly permit the development of individuals along the lines best suited to their peculiar capacity and get from each what he was best able to give. We should avoid the scandals of inhuman charges and of indecent exploitation of suffering humanity by the sharks of the profession, and we might well avoid the tragedy by which the impecunious young doctor must select general practice, for which he is ill equipped, because he can not afford to devote himself to the pursuit of pure science, for which he is best fitted.

I can not leave this subject without admitting that I am not unmindful of the undoubted defects of the system which I have just described. I do not for a moment overlook the danger that we may come to regard efficiency as a god, that we forget that the individual is a patient and think of him only as an instance of disease. I am not unmindful of the danger of losing that broad culture which was developed in the physicians of the last generation. But these dangers seem to me largely avoidable if clearly appreciated. I can not doubt that the pursuit of science will always bring out inherent qualities of greatness. I can not doubt that the care of the sick will always develop the humanities, and I can not doubt that a profession which has for its sole aim and object the mitigation of the sufferings of mankind will attract to itself men endowed with the same inherent possibilities for greatness that have always characterized the followers of Aesculapius.

TO A DISSECTING ROOM CLOCK

Beat on, thou clock (Time's heart) on th' wall,
O'er the hearts that are stilled below;
With thy systole and diastole
Eternities ebb and flow.

How still, on their chilly beds of stone,
Lie they of Life's lowest rung?
From the fitful fevers of World and Flesh,
Resting, the old and young.

Could we draw from their naked souls the veil
(As we strip their flesh) with a hand,
We should see our brothers, under the skin,
And seeing, would understand.

What hopes were locked in thy stony breast,
Old man, ere thy sun went down?
Or you, some one's girl, who, with reckless hand,
Tore the blossoms from Life's fresh crown?

But not for these, by thy hands, old clock,
Will the Future's veil be rife;
For, hours are dead and Time is not
In this valley of shadows—of Life.

Beat on, thou clock (Time's heart) on th' wall.
O'er the hearts that are stilled below;
With thy systole and diastole,
Eternities ebb and flow!

HILTON A. WICK.

Philadelphia, Pa.

IF IT 'TIS, AS IT 'TIS, IT CAN'T BE ANY TISSER

What's the use to stew and fret
And worry like a sinner,
'Cause in the chase or in the race
You don't come out the winner?
So, don't you cry when hard you try
The mark to hit—and miss her.
If it 'tis

As it 'tis,
It can't be any tisser.

Altho' you're broke, just smile and joke,
And never wear a frown.
When you're flat upon your back
You can't get further down.
Things can't be no worse, you see,
And you have this commiser',
If it 'tis

As it 'tis,
It can't be any tisser.

So, work away, through all the day,
Altho' it takes your muscle;
You sure will get a fair show yet
If you just get up and hustle.
Don't you mind, altho' the wind
Does blow a perfect blizzar'.
If it 'tis

As it 'tis,
It can't be any tisser.

Make the best of what you've got,
Don't say, "This life is bitter."
Keep up your nerve and never swerve,
Nor ever be a quitter.

Altho' you're poor, don't you get sore,
And worry out your gizzar'
If it 'tis

As it 'tis,
It can't be any tisser.

If it is as it 'tis,
It can't be any tisser.
What's the use, you silly goose,
To worry out your gizzar'?
For, if you to fret and stew and sweat,
It makes you still more miser'.
If it 'tis

As it 'tis,
It can't be any tisser.

You may howl and you may growl
'Till everything is blue,
Providence aint agoin' to run
A special train for you.
The world won't shake each step you take
To speak still more explicer:
If it 'tis

As it 'tis,
It can't be any tisser.

What is to be for you and me,
I don't know, I confess;
But, if we do what we orter to,
Things will turn out for the best.
So do not go and pay out dough
Consultin' some old wizar';
If it 'tis

As it 'tis,
It can't be any tisser.

Keep up the fight with all your might.
You'll win out at the last.
What is to be of course will be,
Tho' it never come to pass.
So, do your best and then rest
Up easy, and consider:
If it 'tis

As it 'tis,
It can't be any tisser.

G. W. BURNER

Johnstown, O.

APHONIA CURED BY STEROPLASTIC MEANS

Two interesting instances of the cure (more or less complete) of loss of voice were reported last year, at a meeting of the Laryngorhinologic Society of Wien. (*Wien. Med. Woch.*, 1914, No. 49), by F. Neumann and D. Kofler, respectively. The cause of the aphonia in one case (of 20 years' duration) was, one of the vocal cords being scarred and degenerated as a result of diphtheria in childhood; in the other, an atrophied vocal cord following paralysis [also diphtheritic?].

The cures were effected by injecting paraffin into the disabled and shrunken cords, thus causing the bands to approach and, so, to admit of their vibrating. The paraffin, in the more successful case, had a melting point of 42° C.

Among the Books

PRACTICAL MEDICINE SERIES

The Practical Medicine Series. Edited by Charles L. Mix, A. M., M. D. Series 1915. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, M. D., Albert H. Andrews, M. D., and Wm. L. Ballenger, M. D. Chicago: The Year-Book Publishers. 1915. Price \$1.50.

The year 1914 was not especially prolific of ophthalmic investigation in any particular department, unless one excepts such subjects as glaucoma and the conservation of vision; the world war is probably responsible for the marked decrease in the output of literature on the eye and its diseases. Nevertheless, there has been more than enough of interesting and important articles, monographs, and other publications, to supply, in review or abstract, several volumes of this series. The same is true of laryngology and otology. The editors, in fact, confess that their embarrassment has been the embarrassment of riches rather than of poverty; and they have been obliged to omit, for lack of space, the good work of many contributors. Not the least interesting feature of the book is to be found in the comments appended to the abstracted accounts of papers by others which the editors have felt called upon to make.

PRESTON: "FRACTURES AND DISLOCATIONS"

Fractures and Dislocations. Diagnosis and Treatment. By Miller E. Preston, A. B., M. D. With a Chapter on Roentgenology by H. G. Stover, M. D. With 860 illustrations. St. Louis: C. V. Mosby Company. 1915. Price \$6.50.

The avowed object of this book is to offer the reader a working knowledge of the subject in as few words as possible, avoiding for the most part all theories and arguments which are void of practical value for the surgeon who has to diagnose and treat the various injuries met with in actual practice. The author has endeavored to make the reader an eye witness of the various deformities, as they appear immediately following

the accident, on the ground that there is much to be learned by inspection in the average case of dislocation and fracture and that the information thus gained may be put to immediate use without waiting for the x-ray returns. In pursuance of this policy he has illustrated the book very plentifully with photographs, taken, to be sure, under rather unfavorable circumstances, but still clear enough to familiarize the reader with the appearance of the various clinical deformities.

The time-honored classification of fractures under one heading and dislocations under another has been abandoned, and the more practical method adopted of considering the injuries according to the anatomical region in which they occur. That the value of the x-ray in this branch of surgery is not belittled by the author is indicated in the inclusion of a separate section on this subject by Doctor Stover, of the University of Colorado. The practitioner is emphatically recommended to make roentgenology a routine measure in dealing with bone cases.

BETHEA: "MATERIA MEDICA"

Practical Materia Medica and Prescription Writing. With illustrations. By Oscar W. Bethea, M. D., Ph. G., F. C. S. Philadelphia: F. A. Davis Company. 1915. Price \$2.00.

As the title implies, this book is devoted chiefly—indeed, almost exclusively—to the practical aspects of the subject; to the preparation, selection, compounding, and prescribing of remedies.

As the author very pertinently points out in his preface, the therapeutic and pharmaceutical phases of the subject are exhaustively treated in many excellent volumes and are ably taught in medical colleges, but the practical part is often neglected. Both books and teachers too often neglect to impress upon the student what preparation of a remedy will best meet the demands of the particular conditions, the precautions to be observed in employing them, how to prescribe them correctly, whether alone or in combination, and if in combination, with what forms and preparations of other agents, what is the

safest and most convenient form of administration, and so on, and so on.

Such instruction is the particular object of this book, and in this capacity it will, we feel sure, appeal to the student, to the teacher, and to the general practitioner who is obliged to be himself the student and the teacher

ORMSBY: "DISEASES OF THE SKIN"

Diseases of the Skin: For the Use of Students and Practitioners. Illustrated with 303 engravings and 39 plates. By Oliver S. Ormsby, M. D. Philadelphia and New York: Lea & Febiger. 1915. Price \$6.00.

Doctor Ormsby is the man upon whom the mantle of James Nevins Hyde and of Frank Hugh Montgomery fell when these two illustrious dermatologists passed away. He confesses his indebtedness to the works of his distinguished colleagues in the preparation of this book. Many illustrations have also been reproduced bodily from Doctor Hyde's textbook.

The present work is thoroughly up to date. All advances are duly noted. The literature of dermatology has been carefully searched and reviewed, in order that the pages of this treatise may reflect the subject as faithfully and completely as the limits of a single volume will permit. The newer methods of diagnosis and treatment, so far as they are of proven value, are incorporated, together with the results of recent research in etiology and pathology. Opinions of experienced dermatologists are freely quoted.

The scope of the book is extended to include diseases of the hair, the nails, and the mucous membranes, all of which, of course, properly belong to the skin. The balance between the academic and the clinical phases of the subject is well preserved, with here and there a slight excursion into the historic and bibliographic. The physical features of the volume are excellent, and do the publishers great credit. The illustrations are especially worthy of mention; and, of course, illustrations are a peculiarly important part of a work on skin diseases.

ROBINSON: "SEXUAL IMPOTENCE"

A Practical Treatise on the Causes, Symptoms, and Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women. By William J. Robinson, M. D., Editor of *The Critic and Guide* and *The American Journal of Urology and Sexology*; Author of "Never-Told Tales" and other works.

Fourth edition, revised and enlarged. New York: The Critic and Guide Company, 12 Mt. Morris Park, West. 1914. Price \$3.00.

There are very few physicians in this country who, if they were requested to give the name of the authority on the sexual diseases, would not reply, almost involuntarily, "William J. Robinson." Anyone who has read his book on "Sexual Impotence" will understand at once why this would be the answer. Doctor Robinson writes of things with which he is familiar. He, therefore, is in a position to enrich his pages with scores of illustrative cases, and, so, the answers to the questions arising in the reader's mind are found in some absolutely illuminating clinical experience. It is this familiarity with the subject, breathed into every paragraph and every page, that makes this book the most practical and most comprehensive, as well as the most interesting, work on the subject that this reviewer ever has seen.

If you were to ask this writer as to the distinguishing features of the book, he would say, the absolute candor with which Doctor Robinson discusses every phase of his subject. He is never influenced by precedent, and consequently his conclusions are frequently refreshingly different from those of other writers upon sex-subjects—as when he points out that masturbation is not inevitably harmful to the "victim"—and to this subject he devotes ten of his most interesting chapters. Among other topics to which much attention is given may be named: coitus interruptus and its variants; pollutions and spermatorrhea; the causes, symptoms, clinical varieties, and treatment of male and female impotence; sterility; and priapism. The final chapter is devoted to prescriptions.

STARLING: "PHYSIOLOGY"

Principles of Human Physiology. By Ernest H. Starling, M. D. Second edition. With 566 illustrations. Philadelphia: Lea & Febiger. 1915. Price \$5.00.

Under the formalism of anatomy, the living body appears as a sort of set piece, much the same as the cadaver, which one dissects, except that the machinery in the cadaver has stopped, filled, as to its vessels, with a given quantity of blood, which is kept in motion by an automatic pump, and wired with an intricate scheme of nerve trunk and exchanges.

With the study of physiology, however, the subject takes on an entirely different aspect. It becomes apparent that the body, instead of being a static structure, is rather

in the nature of a visible dynamic process—a short-circuit arc, so to speak, between two poles, the higher and lower potentials of which consist, respectively, of the anabolic and katabolic influences of its environment, whose structural form represents simply the plastic molding of the medium into lines of least resistance and whose coefficient of vitality may be expressed by the net potential divided by the resistance. The structural forms are the ultimate reactions of the cells to the kinetic dynamism that constitutes what we call life; they are the paths blazed by this dynamism between its two poles. Function determines structure; and function is the kinetic adaptation of the parts to the welfare of the whole.

All of which simple and unifying conception of the human body finds illumination in Professor Starling's masterly work on physiology. It is, in very deed and truth, the work of a master. Every structure in the body is dragged, as it were, to the tribunal of physiology, to determine its functional value from this larger standpoint. Physiology is reduced to elemental principles and indisputable links established between the elemental functions and the higher functions of life.

It is needless, in these days, to point out the practical value of such a physiology. He is the most skilful and rational physician who can discern the course of pathologic processes and apply the remedial agencies at a point nearest to their functional origin and furthest from their structural effects. The signs of the time point strongly to a state of knowledge, not so far distant, when all disease shall be reconnoitered and repulsed at these functional outposts and the sphere of medical influence be brought within that field which lies between normal function and abnormal structure—the field of pathologic physiology. To the attainment of this state, works like that of Professor Starling make an enormous contribution. This latest edition of his admirable book may well be characterized as the last word in physiologic research, especially in the realm of metabolism.

GANT: "GASTROINTESTINAL DISEASES"

Diarrheal, Inflammatory, Obstructive, and Parasitic Diseases of the Gastrointestinal Tract. By Samuel Goodwin Gant, M. D. Illustrated. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$6.00.

Explaining his motive in writing this book, the author says that many times he has de-

sired information concerning certain phases of diarrhea and other intestinal disorders, but could not find it except by scanning an enormous amount of current literature; a task requiring considerable time and labor; and eventually repeated experiences of this kind convinced him that a compilation covering diarrhea in all of its phases would prove useful alike to internist, pediatrician, and surgeon. He was asked many times by physicians why he was devoting so much time and space to so generally recognized and easily controlled a disease, and his answer was, that his experience as a teacher had taught him that physicians generally do not understand the various types of diarrhea, their significance, and their treatment.

Here, then, we have both the motive and the *motif* of Doctor Gant's work. It presents to students and practitioners a complete, yet practical, treatise on the etiology, symptoms, diagnosis, and treatment of acute and chronic diarrhea and allied diseases of the gastrointestinal tract, all arranged in logical and convenient form for quick reference. The relation of parasitic diseases to diarrhea is fully discussed, and there is a special chapter on examination and diagnosis. Doctor Gant is a specialist who writes all too seldom and too little. But when he does write, the product is always well worth while; and so it is in this instance.

SHATTUCK: "MEDICAL TREATMENT"

A Synopsis of Medical Treatment. By George Cheever Shattuck, M. D. Second edition, revised and enlarged. Boston: W. M. Leonard. 1915. Price \$1.25.

This work is an attempt to offer, clearly and concisely, a set of sound principles of treatment, based on well-known pathology. The methods described are selected from those which have been tried at the Massachusetts General Hospital or in private practice. Most of them have been taught by Prof. F. C. Shattuck, Dr. William H. Smith, or by others on the staff of the Hospital or of the Harvard Medical School. The author does not pretend that any of these men would subscribe fully to everything here set forth or that further advances will not require revision.

In this edition, as in the first, completeness has been sacrificed to brevity, but new material has been added and many alterations have been made. More reliance than before has been placed upon personal experience, although the information about salvarsan has been derived chiefly from recent literature.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6164.—“The Old Problem of Propagation.” V., Arkansas, writes: “Some years ago, women wanted me to ‘do something’ to stop them from breeding. Now they want me to start them breeding. Can you tell me what to do or give them? I am serious about this.”

The present writer is inclined to believe that women today feel very much as their grandmothers did; that is to say, some desire maternity; others dread it. Not a year passes in the practice of the average physician without his encountering requests to prevent the bearing of children and equally urgent appeals to produce fruitfulness.

A very few moments' consideration will, we are sure, cause you to realize that the very procedure that would prove effective in one woman's case would fail with another. The cause of nonfecundity must always be ascertained, and, in the absence of definite knowledge as to the woman, it is absolutely essential that the condition of the man receive attention. For, it must be borne in mind that women who had been “sterile”—that is, had no child by their first husband—have borne a child within a year with a different mate. It is an interesting fact that a woman may fail to conceive by one man, yet, bear children to another; yet, the same man, unable to impregnate this particular woman may prove capable of impregnating any number of other women.

On the other hand, the man may (usually through an earlier improperly treated Neisser-bacillus infection) be afflicted with azoospermia. Frequently malposition of the uterus is responsible for sterility in the female; then, also, the vaginal or cervical secretions may prove fatal to the most active of spermatozoa.

The subject, unfortunately, is altogether too vast to be intelligently considered in the scope of this department. To anyone really interested, we suggest the study of Robinson's

“Treatment of Sexual Impotence and Other Sexual Disorders in the Male and Female.”

QUERY 6165.—“Tumor Near Bladder.” F. C. F., Illinois, has submitted a specimen of urine, for examination, with the following brief history of the case: “A farmer, 69 years of age, complains of frequent urination, a burning sensation when urinating, and pain in the lower region of the bladder. He has no fever. Percussion and palpation disclose dulness or flatness on the right side of the bladder region, where also an appreciable mass is felt. The abdomen is slightly swollen. The patient feels weak and exhausted. He has external ulcerated hemorrhoids and a prolapsed rectum. I fear malignancy.”

Unfortunately, you omitted to state the amount of urine voided in a 24-hour period, consequently we are unable to estimate the urea and the total solids. We note that the reaction was strongly alkaline, and there were present considerable numbers of colibacilli, staphylococci and streptococci.

The exact nature of the “mass” in the abdomen, of course, must be ascertained. You do not definitely state its location. There may be present a cystitis and a pericystitis.

It would be well, we think, to dilate the anal sphincter, inject the hemorrhoids, and correct the prolapsus ani.

The strong possibility of prostatic involvement in this case must not be lost sight of.

On general principles, we suggest the injection of an appropriate bacterin, one dose every third day; also, the internal administration of a combination of the following: Hexamethylenamine, grs. 5; acid sodium phosphate, grs. 10; tartaric acid and sodium bicarbonate, for effervescence, also, arbutin, gr. 1; this taken every four hours with a glassful of thin barley-water. Your patient might also advantageously receive papain

pepsin, and berberine before meals, and the arsenates of iron, quinine and strychnine, with nuclein, after eating.

Hamameloid, gr. 1-3 to gr. 1-2; collinsonoid, gr. 1-3, and eupurpuroid, gr. 1-3, may be given in alternation with the hexamethylenamine and arbutin.

If the patient objects to radical treatment for the hemorrhoids, try moderate dilatation of the sphincter (digital), and prescribe a mildly astringent ointment to be applied after stool and on retiring.

Drastic purgatives or even very active laxatives are, of course, undesirable. If there is any difficulty in securing free evacuation of the intestine, order a phenolphthalein compound tablet, to be taken with a glassful of water, at bedtime. Purified petrolatum (pure or in emulsion), when retiring, will also meet the conditions. If there is pericystitis, suprapubic or perineal drainage is essential.

QUERY 6166.—"Shall I Dispense?" L., Ohio, writes: "I do not know what to do about laying in a stock of drugs for dispensing purposes; in fact, somehow the idea of dispensing does not appeal to me strongly and I am trying to avoid it as long as possible. Two firms have left at my office an assortment of tablets, capsules, and such, these to be paid for only as used. Somehow, I feel that, if I am to do any self-dispensing at all, I'd prefer to use the active principles. I should like to have you suggest a not too extensive list of remedial agents most necessary for a doctor in general practice to carry. So far, I have been using but very few of the trial preparations mentioned."

If you decide to do your own dispensing, we can assure you that the alkaloids and allied products, if intelligently used, will prove success-makers. CLINICAL MEDICINE has, during the past year, published several articles covering this very ground rather fully. The list of remedies named by Doctor Candler, in his paper entitled "Making Good in Medical Emergencies" (beginning in January, 1914, CLINICAL MEDICINE), can hardly be improved upon; still, for general dispensing, various other standard preparations must be carried in stock.

Obviously, doctor, it is extremely difficult for one man to make a perfectly satisfactory selection for another practitioner. In the first place, it is for you yourself to decide just how much you are prepared to invest. In this connection, please remember that it is economical to buy in quantity; and, as practically all the standard active-principle

preparations do not deteriorate, it is quite safe to do this. If you invest in one of the larger medicine-cases offered, you will be in position always to give the right remedy for virtually any condition confronting you at any time and wherever you may happen to be; while, with a well-selected supply of standard remedies at your office, you can maintain effective medication, secure definite results, and be independent of the druggist's stock.

If you desire to make out a list of simples and compounds such as appeal to you, it will give the present writer pleasure to revise it and suggest such alterations as experience has taught him might prove advisable. Meanwhile, you will doubtless be interested in the article entitled "Palatable Prescribing for Children," which appeared in the September, 1915, number of CLINICAL MEDICINE.

QUERY 6167.—"Adenitis of Uncertain Origin." R. K. M., Oregon, forwards a small fragment of tissue taken from the floor of an ulcer located in subcutaneous tissue. The disease involves the lymphatic glands in the cervical region and is said to be a sequel of an attack of smallpox five years ago. There are cicatrices of older ulcerations along the lymphatics in this region, showing that the superficial cervical glands were involved. The existing trouble, we are told, seems to have followed along the structure of the mandible, also involving the lymphatic glands adjacent to the superior maxilla, and there are signs of purulent matter in the antrum of Highmore. Further:

"The present outbreak of activity dates from July 4, 1915, with acute neuralgic pain in the right side of the face. The suffering has been extreme, but only within the past two weeks has there been any sign of purulent accumulation in the antrum; that is, discharge in the nasal cavity. Will you kindly have a test made of the specimens I am sending, and send me the pathological finding; also tell me what serum I should use—I strongly fear tetanic convulsions.

"The ulcer is extremely slow in its progress, owing, I believe, to the blood depravity existing for months. The nervous phenomena are severe and the nervous cycles are extremely hard to manage. The pain yields to morphine (1-2 grain) and acetanilid compound tablets, given once or twice in the twenty-four hours. Small doses of hyoscine and morphine were given, earlier, for the pain, but are not now required. Acid fruits seem to disagree, as does also all protein-bearing food.

The temperature has been subnormal throughout. The small fragment is the only specimen I could procure, as the patient will not permit making a scraping for examination.

"My location is in central Oregon, where access to hospital advantages cannot be had. Physicians are not numerous and drug supplies not easy to procure, on account of the primitive transportation and distance. Any indicated biological serum would be appreciated. I greatly feel the need of your report on the pathology of the case."

The specimen sent, unfortunately, was altogether too small to make a section properly; however, you seem to have to deal with a somewhat serious condition, and you may possibly have to eradicate the entire gland or even chain of glands. Unfortunately, you do not give us any idea of the age of your patient. It is a question, of course, whether the adenitis is really a sequel of variola; still, adenitis not infrequently follows rubeola, scarlet-fever, and other of the exanthemata. Occasionally after vaccination the axillary and more rarely the cervical glands may become involved. We assume that syphilis and tuberculosis can be excluded.

Send at once some of the pus and a blood smear, together with a specimen of urine (4 ounces from the 24-hour output, stating the total quantity voided) to your pathologist. If possible, under local or general anesthesia (not necessarily profound) incise or curette one of the more accessible glands and forward the entire debris.

The line of treatment you have followed is beyond criticism, although personally we should have been inclined to give very large doses of an iodine and nuclein, in alternation with phytolacca and echinacea. A very useful formula in such cases is: Calx iodata in association with arsenous iodine, nuclein and vegetable alteratives. Another useful preparation is one containing calx iodata, mercuric iodide and nuclein. However, in the majority of these cases of chronic suppurative adenitis, surgical intervention is absolutely necessary; not infrequently the most extensive dissection being called for.

An autogenous bacterin would be better, of course, than any stock preparation.

abortions or miscarriages. Her mother died in puerperium, cause unknown; her father is in good health, as are also 4 brothers and 2 sisters. Six years ago, she had what was called gallstones. She has never been stout, and prior to her last pregnancy usually weighed 112 pounds; her present weight is 132 pounds. Her pulse is about 100, somewhat tense; her temperature registers 99° F. She says that she now feels as well (or even better) as she usually did, except for pain and some swelling in the right clavicle, and for these treatment is sought. She thinks that as far back as a year ago there has been a little tenderness in the bone, beginning at about the center; but in the last two months she has had two severe attacks of pain. The minor two-thirds of the bone is probably more than twice as large as the clavicle on the opposite side, feels hard, and is tender to touch. There is pain in the right shoulder, and this extends up the side of the neck to the ear whenever a severe attack comes on. Her urine appears to be normal."

It is possible that you have to do with an osteoma, and an Abderhalden test might prove informative. What is the character of the pain—dull and persistent or intermittent and lancinating? Is the skin of the affected area at all reddened?

When sending blood to the pathologist, it would be well to forward also a specimen of urine (4 ounces from the 24-hour output, stating total quantity voided), and also report fully the results of a very careful physical examination. Pay particular attention to the heart-sounds, blood pressure, area of hepatic dulness, condition of pelvic organs, and other data. Ascertain whether distress is caused by the elevation of or by inward pressure upon the humerus. Is the mamma on the right side abnormal in any way? Give us all the light you can, doctor, then we shall be in a position to aid you more intelligently.

QUERY 6169.—"The Value of Pituitrin and Veratrine in Obstetrics." J. S. C., Oklahoma, reports a case of abortion as follows: "Multipara; pregnant two months; dead fetus; no pains; flowing thirty-six hours; very little dilatation. I gave 1 Cc. pituitrin, in one-half hour another dose, and again half an hour later the third dose of 1 Cc. Everything came away from the patient in less than two hours from the time she was first seen."

Describing another experience, J. S. C. writes:

QUERY 6168.—"Osteoma?" W. C., Texas, asks us to offer diagnosis and suggestions as to treatment in the following case:

"A woman, aged 27, married 12 years, mother of one child 6 years old, is pregnant in the seventh month. She has had three

"The woman, a primipara, was seized with eclamptic convulsions. The doctor first called saw her at about 8 o'clock in the evening, and he gave an injection of hyoscine and morphine and left. He was called again at about midnight, and now ruptured the membranes, and also gave an injection of 20 drops of Norwood's tincture of veratrum viride, repeating this after a while. Nevertheless, the woman had had six more hard convulsions, and I found her in the last one when I first saw her at about 5 in the morning—having been called in the meantime. In addition to the narcotic and the veratrum, I learned, she also had received a purgative of some kind.

"After I had looked over the situation, the woman was at once given pituitrin, the injections being repeated twice at half-hour intervals, and after that she had no convulsions. Chloroform was given for a few minutes, to deliver the head over the perineum.

"In reflecting upon this case and considering Doctor Williams' claim of the absolute worthlessness of veratrum in these cases, I have wondered whether the pituitrin had any effect in controlling the convulsions. I probably shall never see enough such cases to decide this question; it may be, however, that in this remedy we have something of value, unless the result in this instance was merely a coincidence. What has the editor to say?"

Your experience and reflections interest us, but we venture to express the hope that at the next opportunity you will give the active-principle veratrine instead of any of the fluid preparations of veratrum, and then compare the efficacy of the former. Of late, the present writer has given veratrine and lobeline sulphate in alternation, and the results secured have been most satisfactory. The efficacy of veratrine in eclampsia has been so definitely proven that the assertion of any single person to the contrary cannot be taken seriously.

That pituitrin, by enabling the physician to empty the uterus very quickly, may prove an extremely valuable remedial agent, is a reasonable assumption. We trust that opportunity will offer to enable you to test this matter further and that you will report your experience for the benefit of the profession.

QUERY 6170.—"Leukoplakia Buccalis." G. B. S., Iowa, writes as follows: "To be regarded as having ability is, as a matter of course, accompanied by its inevitable penalty;

and here is an illustration. A man about thirty-six years of age has leukoplakia, which persists, although he has quit smoking and chewing tobacco. I have tried to gather information about the treatment, but could find nothing of recent date. If anything is known to cure this vexatious trouble, I naturally should like to learn about it, and I come to THE CLINIC, where you generally hand out the right advice."

First, doctor, let us thank you for your expression of confidence—which we always endeavor to justify. As to leukoplakia, that is a rather intractable malady, and any therapeutic procedures, in order to be really effective, must be based upon a clear understanding of the conditions underlying it. This skin affection is not, necessarily, a manifestation of psoriasis or a symptom connected with syphilis; for, the condition often arises and many times exists independently of these and other maladies. Unfortunately, the actual cause (or causes) is not clearly established.

As to your case, can you positively exclude lues or has the patient at any time received mercury in large doses? Or, is there any pronounced trouble in the digestive tract? For, in this writer's opinion, gastric or gastro-intestinal catarrh is often an important factor.

When well developed, as already stated, the malady is most persistent and rebellious. The use of tobacco must be strictly prohibited (as you have done); also, thorough elimination—renal, dermatic, and intestinal—must be secured and maintained. The mouth should be washed out frequently with a 1-percent solution of sodium chloride, while balsam of Peru is to be applied to the lesions daily or every other day.

Internally, we should administer echinacea and iris between meals; papain, and berberine before eating; and two or three Bulgarian-bacillus tablets three times daily, instructing that these be crushed in the mouth and then washed down with a little water.

If you will submit to a reliable pathologist a specimen of your patient's urine (remembering the data required) and give us a clearer clinical picture, we may be in a position to make more definite therapeutic suggestions.

QUERY 6171.—"Dysmenorrhea." O. H. S., Indiana, writes: "I have an unusual case of dysmenorrhea, and am needing your advice. The patient is a girl of 17, strong, and well developed. Mother died of tuberculosis.

I have been with her during several of her more troublesome periods. On May 6, 1915, I was called at 7 p. m., and found her suffering severely with pain in the sides, in the region of the ovaries. I used morphine, 1-1 grain, with atropine, 1-150 grain, hypodermically, then used chloroform for one hour before she was easy. On May 7, the pains returned, and it required some treatment to relieve her. The flow did not begin until the 12th, being six days, you see, from the beginning of pain, and it lasted four days. On the 19th I began treating her locally by dilating cervix, as best I could without chloroform, and using tampons. As a result, in July, the menses were normal and painless. She did not come again for treatment and went away on a visit, and while gone had a very bad attack again. On August 5 I was called, she being in terrible pain, almost having convulsions. I used morphine and hyoscine, then chloroform for one hour before she was easy. No flow. So, on the 8th, she washed some clothing and ran around in the hot sun. At 8 o'clock I was called, and she was suffering intensely, almost in convulsions. I used morphine, 1-2 grain, atropine, 1-150 grain, and two ounces of chloroform, and she was but a very little better in two hours. I put her on apiol and ergot and left her to see another patient. I believe she will die in one of these attacks if not relieved. Now, if you can advise me I will be very glad. How would it do to remove the ovaries?"

As you will readily understand, doctor, it is impossible for us to prescribe intelligently for your patient without a clearer idea of basal pathology. You say, "How would it do to remove the ovaries? This surely would correct the trouble." In our opinion, it would be little short of a crime to perform such an operation upon a strong, well-developed, healthy girl of seventeen, simply because she suffers from dysmenorrhœa.

It is almost certain the trouble will disappear with marriage, and if you will make a careful examination and institute correct therapeutic procedures, it is more than likely immediate relief may be extended.

You state that prompt improvement followed partial dilatation of the cervix. Why not anesthetize the girl and do a thorough dilatation, then, if there is congestion, uterine or ovarian, apply local depletion with glycero-gelatin suppositories, every second night, first flushing the vagina with two quarts of very hot water. Internally, give Buckley's uterine tonic, one tablet three

times daily for ten days before the expected period, and, should pain occur, gelsemine alternated with cannaboid and atropine. Should this not prove effective, a very small piece of extract of belladonna or a few minims of a fluid extract may be applied to the cervix. This should be placed in a pledge of cotton, which should be moistened, and then placed in contact with the os, and be held in place with strips of gauze. Almost as good results follow painting the cervix with a few drops of fluid extract of belladonna.

Before instituting any treatment, however, ascertain the exact condition of the pelvic viscera; note also pulse rate, condition of sphincter ani, and the like. Does the girl suffer from constipation? If so, correct it.

QUERY 6172—"Multiple Neuritis of Alcoholics?" W. T. S., Ohio, asks us to outline "the best treatment for the painful stage of multiple neuritis of alcoholics." His patient is a merchant, aged thirty-seven, who has used alcoholics for many years. He has taken the Keeley cure twice in the last two years, but relapsed. Finally he stopped drinking, a few weeks ago, after a steady five-months' carouse. Most of this time he has had neuritis. The pain changes its location from day to day—being felt on the top of the foot, in the ankle, upper part or middle part of the anterior tibial region, behind the knee, in the thigh or hip. After a paroxysm the affected part is exceedingly sore or tender for many hours. Besides general tonics, hepatic stimulants, and the like, phenacetin, the salicylates, and sedatives have been given.

The treatment is practically the same in all forms of polyneuritis of toxic origin, but, above all, whether owing to alcoholism, plumbism or mercurialism, the cause (if discoverable) must be removed. Rest in bed is absolutely essential, and, if the patient is strong enough, he may be given a daily hot salt-bath, the immersion lasting at least fifteen minutes. If this is out of the question, have the body sponged with hot epsom-salt solution (1 ounce to 3 pints of water); then given an alcohol-rub, and finish with brisk friction with a rough towel. Systematic massage and the frequent application of the sinusoidal or faradic current prove beneficial in many cases.

Internally, lecithin should be given, with strychnine valerate and strychnine hypophosphite alternately. Occasionally strychnine sulphate, 1-30 grain hypodermically,

three or four times daily, proves more effective. In some cases, solanine works beautifully. Also, of late, chromium sulphate has been highly recommended for this affection.

Small doses of aconitine and colchicine have proven useful in the writer's practice. Where the electric current is unavailable, a preparation of ichthylol, belladonna and aconite may be applied to the painful area. A good formula is: ichthylol, one dram; extract of belladonna, 30 grains; extract of aconite, 1 dram; liquor plumbi subacetatis, 1 dram; lamum anhydias, 6 drams. Atropine and aconitine may, of course, be substituted for extract of belladonna and extract of aconite. Do not forget the value of saline elimination.

Externally, methyl salicylate, 1 dram to 1-2 ounce of lanolin, may be rubbed into the painful areas; but the high-frequency current (vacuum-electrode) undoubtedly produces the most rapid results, the pain frequently disappearing after one fifteen-minute treatment.

QUERY 6173.—"Possible Untoward Effects of Pituitrin." A. P. South Dakota, has read that "very serious conditions" have followed after the administration of pituitrin, and now wishes us to tell him what those conditions are.

Our correspondent is correctly informed, as the following brief enumeration of the more important harmful consequences will show:

1. Rupture of the uterus or of the cervix has occurred several times, brought about by the sudden intense contraction of the womb and the forcible expulsion of the fetus through an undilated os. (2) A small fetus may, while in an improper position, be forced out into the vagina and, so, necessitate delivery with the forceps. (3) It has happened that the placenta has been detached prematurely, and this, naturally, given rise to profuse hemorrhage. (4) Undesirable systemic effects are among the possibilities, as will be seen by a study of the physiologic action of pituitrin.

In view of these facts, the present writer has come to the conclusion that this agent should never be administered until dilatation of the os is complete and the fetal presentation is positively known to be normal. Some-

times in the case of multiparas, although having a roomy birth-canal and with the fetus in satisfactory presentation, we have to deal with a socalled "lazy uterus." It is here where pituitrin may be employed with advantage; but, like all active agents, it must be given intelligently, and then only when strictly indicated.

QUERY 6174.—"Hemorrhoids." T. C. B., Kansas, writes: "I have met a number of patients who have been treated for hemorrhoids by a doctor who 'puts something on the piles.' It is said they disappear entirely in from twenty-four to forty-eight hours without pain or discomfort of any kind. The physicians who are using the method are not going to give the secret away so I ask information from your staff.

Frankly, we are at a total loss to explain this "cure." No drug, or combination of drugs with which we are familiar could possibly produce such results. It is impossible to believe that the application of any substances would cause the disappearance of a pile in forty-eight hours; moreover the remedial agent which would prove effective in internal hemorrhoids would not have the slightest influence upon external piles.

It would be well, we think, before accepting patients' statements to be quite sure that they did suffer from hemorrhoids, and also to find out whether the individual treating the tumors by such an application did not dilate the sphincter ani before or after such anointing.

The writer has tried practically every combination of drugs, and he has yet to find any topical application exerting any very pronounced effect on even an ordinary hemorrhoidal tumor in forty-eight hours. We trust, you will endeavor to find out something more definite about this particular method of treatment. Who is the doctor who puts the "something" on? It is just possible he has learned to cone his thumb and fingers and replace therewith protruding hemorrhoids, anointing them with a cocaine ointment or some other anesthetic, sending the patients on their way firmly believing that they are cured.





"THE LITTLE PATIENT."—Michaud

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Scarlet Fever—Pointers Old and New

In one of his very excellent popular medical articles prepared for lay folk, Dr. W. A. Evans, one-time health commissioner of Chicago, reminds the readers of *The Chicago Tribune* that, unless special precautions are taken, the prevalence of scarlet-fever will increase, month by month, until the end of April, while, during May the number of cases will be practically the same as in April. This, he sets forth, is the rule for colder climates. In the warmer parts of the United States, the disease will be at its maximum in March, while May will see a drop similar to that which in the north occurs in June. In other words, although scarlet-fever may occur at any time of the year, it is most likely to become epidemic during the spring months, and we know that before this number of CLINICAL MEDICINE reaches our readers many of them will be strenuously engaged in the annual battle with this disease.

Unfortunately, we know, as yet, little about the essential etiology of scarlatina. For some time there has been a more or less general belief that it is caused by streptococci, and for this reason special streptococcal bacterins have been prepared, and these have been used with fair success for prophylactic purposes.

Whatever the specific microorganism, it is present in the blood, the desquamating scales, the discharges from the throat and nose, and possibly other discharges. However, in recent years it has become the general opinion that the importance of the desquamating skin as a means of conveying the infectious organism has been greatly overrated, while more and more importance is being ascribed to the infective character of the nasal and aural discharges. It is for this reason that physicians now insist strongly upon disinfection of the nose and throat as an essential part of the treatment, in the expectation of thus reducing the probability of the transmission of the disease; and not merely as heretofore, because of the relief which the patient experiences from this treatment.

In this connection, we may call the attention of our readers to a brief abstract appearing in another portion of this issue, telling of the method of treating scarlet-fever being employed in the French army, where the disease is said to be epidemic; this treatment depending for its efficacy largely upon the attention paid to the upper air-passages and the skin. Chantemesse, who makes this report, uses, as a regular routine, applications of 10-percent carbolized

oil for the throat and nose. (See "What Others are Doing" for further details.)

Another French observer, Dr. Felix Ramond, noticing the very favorable effects produced by sodium salicylate in scarlatinal rheumatism (which occurred in 29 percent of his cases) was led to try the salicylate in uncomplicated scarlatina. He declares that, under this treatment, temperature and pulse fall, diuresis occurs, his patients feel better, and the effect on complications is just as evident. Dosage, the same as for rheumatism.

Kerley, in his excellent "Practice of Pediatrics," advises irrigation of the throat with hot salt solution, at a temperature of 120 degrees. "Those who have thus treated the fetid, sloughing throat of scarlet-fever," he says, "need no argument as to its possible advantages."

These irrigations are made from a fountain-syringe suspended about three feet above the child's body. The largest-size hard-rubber rectal tip is employed to bring the current into contact with the throat, the flow being interrupted every few seconds, but it should be forcible enough to act as a cleansing wash, while the volume of the fluid is so small that no inspiration of water can occur. Although a little difficulty may be experienced at first in making these irrigations—which are to be applied with the child resting on its right side, without a pillow—the relief is so great that usually no trouble will be experienced after the first irrigation has been administered, and appreciated for the relief afforded.

Doctor Candler, in his splendid "Everyday Diseases of Children," advises the use of an alkaline antiseptic solution for cleansing the mouth, throat, and nares. One of the well-known menthol-compound tablets, dissolved in 12 ounces of hot water, provides an excellent solution for this purpose.

The method of treating scarlet-fever originally proposed by Milne has been widely adopted, especially in England and now also, as we learn, in France. It is extremely simple, and consists, in the main, in anointing the whole body with undiluted eucalyptus-oil. It is asserted that these inunctions not only serve to prevent the scattering of the scales and add distinctly to the comfort of the patient, but that they also, either through skin absorption or inhalation of the volatile eucalyptus-oil, exert a decidedly modifying action on the course of the disease.

Turn to almost any of the standard textbooks on pediatrics, and you will find this or some similar statement: There is no specific medical treatment for scarlet-fever. In

other words, the average pediatrician suggests almost no medication whatever. Usually, of course, the author will recommend the cleaning out of the bowels with some simple laxative—but that will be about all by way of therapy.

Readers of CLINICAL MEDICINE know that we believe in more energetic measures. There are at our command remedies of distinct value for combating scarlet-fever—remedies that many physicians have come to look upon as indispensable. And first on this list we are bound to name calcium sulphide; for, as Candler cogently declares, "This sulphur compound is the greatest of all systemic antiseptics." Calcium sulphide should be prescribed in doses of 1-6 to 1-3 grain, repeated every hour until the patient is thoroughly saturated with it—exhales the sulphured odor. In association with it, nuclein should be given, in order to increase vital resistance. If there is much fever, it may be combated with small, frequently repeated doses of aconitine, the cardiac effects of which may be guarded against by the administration of digitalin with every second or third dose.

The patient's bowels, of course, should be cleaned out thoroughly at the very beginning of the treatment, preferably with calomel, now on the market in delightfully tasting aromatic tablets, which the child will eat avidly. It may be followed with castor-oil or one of the pleasant effervescing preparations of magnesium sulphate.

If the temperature tends to run high, bathing or giving an occasional cold-pack may be resorted to without fear. Kerley is correct when he says: "The mere existence of a rash is no contraindication to the application of moderate cold to the skin. The pack may be used in scarlet-fever, just as in pneumonia or typhoid-fever. The fear that the disease may strike in and kill the patient is one of the many inexplicable ideas of the laity with no foundation in fact." In giving the pack or bath, care must be taken, of course, that it is not too cold at the start. Begin with a temperature of about 95° F., then gradually reduce—though rarely, if ever, to below 80 degrees. If these baths are followed by inunctions of cold-cream or liquid petrolatum, or rubbing with eucalyptus-oil, either of full strength or mixed with one of the fats, it will add greatly to the patient's comfort.

Particularly on account of the tendency to renal complications (nephritis), which so often occur after the acute symptoms of the disease are past, the diet of the scarlatina-patient is of the utmost importance. Formerly, milk

alone was prescribed; but, it must be remembered that this is a highly concentrated protein food and proteins often putrify, that it has a tendency to produce constipation, especially in children, and that the patient is likely to get very tired of it. Just as safe—in fact, probably safer—and from almost every point more satisfactory, are the simple cereals, given mainly in the form of gruels; various combinations of these being permissible. Fruit juices are usually relished, and may be given freely.

Whatever the diet, the doctor should keep in mind the importance of that old adage of ours—"Clean out, clean up, and keep clean." The bowels should be moved every day, either by means of laxative salines or enemas, or both; while the sulphocarbonates or other intestinal antiseptics need to be given practically throughout the entire course of the disease. Recently many physicians have employed Bulgarian-bacillus cultures, to keep the bowel in a healthy condition. These cultures are of special value after the febrile stage of the disease is past, and during the convalescent—and nephritic—period.

This describes, in briefest outline, the rational modern method of treating scarlet-fever. No attempt has been made to cover the treatment of complications or to give every detail for meeting every complication that may arise. However, we would particularly emphasize the following points:

1. Scarlet-fever is transmitted mainly by the discharges from the nose and throat; also, the throat is probably the breeding ground for multitudes of the causative microorganisms, and, therefore, it is desirable to treat this portion of the body energetically in every case of scarlet-fever. Antiseptic gargles, sprays, and irrigations may be employed, according to the age of the child, the severity of the disease, and the ease of application. In older patients, sprays of carbolized oil are suggested; in younger ones, irrigation in the manner advised.

2. Skin inunctions with eucalyptus-oil are undoubtedly of great value. Eucalyptus is a powerful and, yet, an almost harmless antiseptic.

3. For its direct effect upon the cause of the disease, calcium sulphide is the best remedy at our disposal. It should be given in every case of scarlet-fever, from the very beginning, and continued throughout the febrile stage. It should be supplemented by nuclein, in generous dosage. Aconitine, supplemented by baths or cold compresses, is our best remedy for fever.

4. As in all acute infectious diseases care and attention must be paid to the alimentary canal, which should be cleaned out and kept clean with the aid of indicated drugs, while nutrition is maintained by means of indicated foods.

If you will keep these points in mind, you will not go far wrong.

The Illinois State Hospital for the Insane has substituted clay modeling for golf as a cure for insanity. Let's see; this removes the last excuse for perpetuating golf, doesn't it?—*Cleveland Plain Dealer*

OUR PROVISION FOR OLD AGE

It often becomes a serious question, as we survey the course of human events, to decide whether, on the whole, the race is evolving or devolving. Most certainly, we are adding to our store of facts and developing the mechanic arts; our captains of industry are piling up huger fortunes; our microscopes look more deeply into the minuter forms of matter; our prisons, asylums, hospitals, almshouses, and other public institutions increase in magnitude and completeness.

Is this all there is to it?

The litany said: "From the fury of the Northmen, good Lord, deliver us!" Instead of a few long ships, with a few score of skin-clad spear- and swordsmen, we see millions of fierce Northmen, equipped with the last possibility of death-dealing paraphernalia, rushing upon the south.

Has there been any essential change in the nature of men? in their mental development? in their moral standards? Are we better, wiser, stronger, braver, brainier, kinder than our faraway ancestors?

We might ask to have pointed out to us the modern equivalents of Plato and Aristotle, Jesus and Buddha, Euclid and Archimedes, Phidias and Praxiteles, Homer and Aeschylus. But let us come nearer home and ask about an ordinary, everyday, everybody matter: How about our treatment of the old?

More than one savage tribe, when they concluded that the days of usefulness for any member had passed, served the unfortunate—or otherwise—member up as the *piece de resistance* of a barbecue. The senile might congratulate himself on passing over in a scene of hilarity—à la Clarence in his malmsey butt—in which he himself played the star part. Or, he might find a grim humor in the thought that even in death he would prove a tough morsel. But, in any event, looking at the vicissitudes of savage

life, with its constant struggle for food, for existence, this ending was as merciful as is the bottle of chloroform inadvertently left within reach of the hopeless, inoperable cancer-patient.

Not a week passes but that we read in the dailies about some old man, bereft of hope, unable to find supportable work, dependent upon kin, having committed suicide. What has life to offer such a one to render it attractive? Friends of one's youth gone, children ungrateful, employment unattainable, the failing senses destroying the pleasures open to younger men; all the while the infirmities of age increasing, while the means of relieving them, and providing such alleviation as might be possible are wanting—what wonder that self-destruction is growing in frequency among aged men?

Add to this the consequences of mistaken confidence; the unconscionable scoundrel in whom one trusted, who would rather make one dollar by swindling than two by playing the game straight, robs his victim, not alone of the savings of a lifetime, but also of the respect of his fellow men. To such a man, faith in one's fellows merely is evidence of cerebral softening, and the highest effort of mentality would be an address on the science of getting rid of a trimmed sucker.

Well, suppose the old man has not the nerve to blot out his life—the other week the papers told of one instance, that of a man who had drawn a salary of one hundred dollars a week which he had been handing over to his family. At the age of 74, he was let out, penniless; his wife and children sent him to a little country town and allowed him one dollar a week upon which to live. Naked and starving, this old decrepit man ran out into the streets of Chicago and made known to the world his plight. Better dead?

In the last analysis, a man's life is his own. If the present offers no inducement for living and the future has no betterment in store, why live?

I have before me an appeal from C. A. Burrows, of Lancaster, Pennsylvania. Aged 77 years, he is urging a constitutional amendment permitting the United States government to establish old-age pensions; also, to establish a "twilight home for old age." The former is a most desirable scheme indeed; the latter is but a very small drop in the bucket, and the advocacy of such little measures is liable to divert interest from the main point, the pension-matter. Burrows tells us that only the United States, Russia, Turkey, and Japan, of the great nations, have no such pensions for old age.

A great proposition and one that should receive the active advocacy of everybody, especially of those who begin to realize the need of such a provision for the aged. Mr. Burrows should be heartily supported in his movement.

"He is young who sees more ahead of him than behind him." That's why we never expect to grow old.

SOME CONSIDERATIONS ON BLOOD PRESSURE

The mere diagnosis of increase or relaxation of vascular pressure is not enough. We must know how and why the pressure is altered.

An increase of the pressure may be caused by an increase in the force of the heart or in its rate, by which more blood is propelled into the aorta. Or it may be owing to contraction of the capillaries and arterioles, by which the escape of blood into the veins is hindered. There is a clinical significance in this distinction.

So, also, a lowering of pressure may result from a slower heart action, a weaker or less complete heart action, each beat sending less blood into the aorta; or there may be a relaxation of the arterioles, through which the blood is permitted to escape into the veins more readily. Low tension may also be due to a deficient supply of blood to the left heart, from contraction or other obstruction of the pulmonary vessels, or from stagnation of the blood in the great veins, as in shock.

A short, quick heart-beat has less influence than a prolonged and complete one, as in the former case the heart has not time to be filled with blood and less is propelled proportionately to the force exerted. Complete diastolic relaxation allows a full supply of blood to enter the heart, whereas an incomplete relaxation prevents the entrance of blood. Increasing the tonicity of the cardiac muscle, therefore, is likely to lower the blood pressure, by unduly prolonging the systole. It is probably because of this fact that good observers occasionally have seen better effects from vascular relaxants, such as sparteine, than from constrictors like digitalis, when the circulation needed help.

A rise in blood-pressure slows the pulse by increasing the tonicity of the pneumogastric center in the medulla, while a fall in pressure quickens the pulse by relaxing the tone. Hence, again we see where the influence of strychnine may be exerted, by raising the tonicity of the center and thus slowing and strengthening the pulse.

A rise in blood pressure is accompanied by slowing of the pulse if the rise results from contraction of the arterioles; but, if the pressure rises and the pulse quickens, the change is in consequence of an increase in heart power. When pressure and pulse rate fall together, the cause likewise is to be found in the heart; but if the arterioles contract, the vagus roots are stimulated, the pulse slows, with the rise in pressure. The slowing of the pulse, after the use of drugs that contract the arterioles, is far more rapid than the fall of pressure. If the vagi are paralyzed, we may have an increase in blood pressure and in the pulse rate, from contraction of the arterioles.

We must not fall into the error of considering the circulation as a whole or as uniform. The vessels of the abdominal viscera are quickly influenced by the vasomotor center, contracting powerfully when this center is stimulated; but the vessels of the muscles are scarcely influenced at all; in fact, they are, in reality, dilated, inasmuch as they receive more blood when other areas of the circulation are contracted. Nevertheless, these muscular vessels are influenced by digitalin, contracting strongly, thereby helping to maintain the pressure.

Courage, dear soul,
The hosts of heaven, the whole
Battalion of the seraphim await
To see your battle against wrong and hate.
Not all the angels in phalanx
Could for God's will prevail.
If in our struggling, mortal ranks
These men of earth in love's great cause should fail.
—Edwin Markham in *The Nautilus*

RELIEF FOR THE CORPULENT

Most men and all women who are over the average weight for age and height want to reduce. However, the means of accomplishing this are not so simple as may at first appear. We have practically no foods capable of sustaining life in full health that can not be transmuted into fatty matter.

Fats, sugars, carbohydrates, and proteids alike may serve to increase adiposity. It would seem, therefore, that we are compelled to fall back upon the rather obvious principle of limitation of food—for, if we take in less than we excrete, there necessarily must occur a diminution of one's weight. But—

A jockey had, by dint of incessant self-denial, reduced his weight to the prescribed degree, but just a few hours before the race, partook of an ounce of hot tea, when, presto,

at the weighing he was found to have gained nearly a whole pound. Don't ask me how!

A lady who, in the pursuit of "svelteness," had reduced her intake until she ceased to increase weight, found that she was consuming only thirteen ounces of food in each twenty-four hours; but she was losing strength faster than weight. This thirteen ounces of food included liquids as well as solids.

In the case of men, the problem seems easier. This writer possesses an equator that appears indefinitely expansible; however, abstinence from undue amounts of liquids, together with a vigorous daily application of the bucksaw to a lot of tough old oak wood, serves the purpose admirably; and it dissipates all unpleasant side ailments as well.

Few women seem disposed to look upon the bucksaw with the affection its virtues warrant. They prefer to take medicines.

Try this:

Phytolacca, to loosen the superfluous material.

Lobelia, to stimulate the excretaries to carry it out of the body.

Hydrastis, to close up the void and prevent pendulous skin and wrinkling.

Each to be dosed to the needs and its effect. Continued for long periods, at least several months.

Is this treatment "specific"? Of course not—it is merely suggestive. But that anti-obesity treatment may be effective I know, and there are other things worth trying. Perhaps you will suggest some that have served you well.

THE GERMICIDAL ACTION OF DISINFECTANTS UPON THE TUBERCLE BACILLI

In our daily work, in office and outside practice, we are constantly taking advantage of facts which we consider to be self-evident, but which, after all, required much laborious investigation before they could be determined. We employ, for instance, a 0.5-percent solution of phenol (carbolic acid) or a 0.001-percent solution of mercury bichloride for disinfecting objects that have been exposed to bacterial contamination (please note, only after all visible dirt has been removed by washing and scrubbing) and feel safe that they have been freed from any possible contamination. We paint the skin with iodine prior to making an incision, being satisfied that with an otherwise unobjection-

able technic we need fear no danger from that source of possible infection.

It hardly ever occurs to us, however, to inquire how it is that we can know the actual germicidal action of those antiseptic substances employed in the respective degrees of concentration, and we reck little of the time, labor, and patience expended by the research-workers in their endeavors to furnish us with safe methods of procedure.

This seems to be the unavoidable condition brought about by the acquisition of knowledge (and its application to the practice of medicine) that cannot be obtained in the former manner of clinical and bedside study.

The research-worker in his laboratory, making use of the data ascertained by physiology, chemistry, biology, and all the auxiliary sciences, devotes weeks, and months, and years to the study of some particularly difficult or fascinating problem. The clinician calmly appropriates this student's results; and both are apt to think, each of the other, a little slightlying the laboratory-worker with a pitying smile at the necessarily limited knowledge of the clinician, the latter, with a half-impatient resentment of the didactic assurance of his colleague of the test tube and animal experiment.

Yet, both are necessary and important members of the medical profession. Only in the more vivid, more immediate and more tangible experiences of the clinician we are apt to undervalue the patient labor of the other, albeit, realizing gratefully that without him we should be sadly at loss in many an emergency.

In a comparatively recent number of *The Journal of Infectious Diseases*, Dr. Lydia M. DeWitt and Miss Hope Sherman reported some very difficult and tedious experiments, in which they attempted to determine the germicidal action of certain disinfectants upon tubercle bacilli. While the search for disinfectants has been successful with regard to the great majority of pathogenic micro-organisms, in the case of the tubercle bacillus it has always been attended with an unusual degree of difficulty; owing, according to some authors, to the fatty-waxy capsule with which this bacillus has been provided as a means of defense in its century-old struggle with the animal and human organisms.

Consequently it may be understood why, in all the great mass of literature on general disinfection, there is comparatively little dealing at all directly with the power of chemicals to kill the tubercle bacillus, and

that this has generally been accepted, although it is nonsporogenous, as being among the most resistant of pathogenic organisms.

The researches of DeWitt and Sherman thus acquire an interest which is the greater, as they bear upon those of Finkler, Countess v. Linden, Strauss, and some others with reference to the chemotherapy of tuberculosis.

The elaboration of a suitable method for these experiments has taxed the ingenuity of many research-workers, since certain disadvantages and inadequacies appear to inher in all of them.

After many preliminary tests, DeWitt and Sherman employed a direct method of exposing clumps of bacterial cultures to the action of the disinfectants and observing their power of destroying the viability of the tubercle bacilli and controlled the results of these experiments with animal-cultures, making use of the socalled garnet-method suggested a number of years ago by Kronig and Gaul.

In thus exposing clumps of the bacteria to the action of the disinfectants, the time limits as a rule, were one hour, six hours, and twenty-four hours. At the end of the specified time, the clumps were placed either in a neutralizing fluid or in water, in order to interrupt the action of the disinfectants. In all cases, the clumps were then washed through four solutions, the last two being 0.9-percent salt solution. Bits of the clumps were then seeded on slants of glycerin agar, in order to determine whether they were still viable.

For the animal experiments by the garnet-method, crude Bohemian garnets of equal size were prepared by a rather complicated process, and sterilized. They were then soaked in a thin filtered suspension of human tubercle bacilli and dried over fused calcium chloride. About 30 infected garnets were then placed on small platinum baskets and immersed in the various disinfectant dilutions. At the end of the desired times, the baskets were removed to dishes containing large quantities of distilled water, then either to solution of ammonium sulphide or to another dish of distilled water, and then washed in two salt changes of solutions. Then 10 of the treated and washed garnets were dropped into test tubes, each of which contained 2 Cc. of sterile salt solution, and agitated in a shaking-machine for five minutes.

The fluid, containing the organisms which had been shaken from the garnets was then injected subcutaneously into guinea-pigs.

For controls, clumps and garnets were treated in the same way, using 0.9-percent salt solution in place of the disinfectants.

In not a single instance, did a control-animal fail to develop local and general tuberculosis, nor did a control tube fail to show luxuriant growth, thus proving that the cultures employed were virulent. And it may safely be affirmed that, where the animals did not develop tuberculosis or the culture tubes did not show growths, this was because of the bactericidal action of the disinfectant with which the clumps, or the garnets, as the case might be, had been treated.

Altogether, the investigators named, sacrificed approximately 1,000 guinea-pigs and used many more tube cultures to ascertain the bactericidal value of the disinfectants under examination.

We have described the method at some detail, because we believe it to be of interest for the practitioner to know how much patient study and research may be necessary to obtain results, the summary of which not infrequently may be condensed into a few lines. And these experiments, as we shall show, are not limited in their application to tuberculosis alone.

Under the influence of these and other laborious researches, it may be a little disconcerting and, possibly, discouraging to recall that the value of disinfectants, of fumigation, and of other established methods for preventing infection by various pathogenic systemic organisms has recently been questioned by noted sanitarians.

Of course, we long since have passed the stage when we believed that, for instance, a 5-percent solution of carbolic acid, or even tincture of iodine, applied haphazard to a dirty wound, would counteract infection and in consequence, feel safe without exercising strict cleanliness. But we have been feeling rather comforted after fumigating a room, from which a scarlet-fever patient had been discharged, with sulphur or formaldehyde, and have felt that we had done the needful to make it safely habitable again—perhaps on account of the unholy stench which our fumigation had produced. We are also quite careful to destroy fomites, clothing, and other articles contaminated by discharges of patients afflicted with infectious diseases.

It does seem rather radical, therefore, when we read that Dr. Alvah H. Doty (*Med. Rec.*, Oct. 17, 1914), attempts to disprove the fomites-theory and also the idea that the

air swarms with pathogenic bacteria. Even in the sick-room, he asserts, these germs are much less in number than has commonly been supposed, while being removed from their proper media, they are disabled and of little danger.

Now, while we are quite willing to accept Doctor Doty's high estimation of the disinfecting value of fresh air, sunlight, and lots of soap and water vigorously applied, and while we agree with him in his contention that disinfectants are of little value unless filth and dirt are first removed, we shall feel safer if we continue to burn the clothes into which consumptives or diphtheria patients have expectorated, and have destroyed other fomites which contain the discharges and other contaminating material from patients ill with infectious diseases.

Yet, in spite of all, Doctor Doty's article is well worth pondering over, although it cannot lessen our gratitude to investigators like Doctor DeWitt and her associate for her patient and thorough labors.

"Enthusiasm is that thing that makes a man boil over for his business, for his family or anything he has an interest in, for anything his heart is in. Enthusiasm is one of the greatest things a man can have."

NEW DRUGS VERSUS OLD DRUGS

Dr. W. J. Robinson has the rare faculty of crowding a whole sermon into a single paragraph. Witness his editorial comment, in the last number of *The Critic and Guide*, on that tiresomely reiterated advice to doctors—to beware of the new drugs and stick to the Pharmacopeia. Listen to Robinson:

"Some staid, respectable doctors tell us not to be constantly running after new drugs. It is good advice. It is good advice provided we bear in mind that a drug is not necessarily good because it is old; nor is a drug necessarily bad because it is new. If all the old drugs were good, so many of them would not be kicked out with each revision of the Pharmacopeia. Just look over your drugs in the Pharmacopeias of fifty, forty, thirty or twenty years ago and see how many of them have been dismissed from the last Pharmacopeia. It is not good to be oversanguine in using new drugs that have not been given a fairly good trial by competent clinicians; but it is just as bad, if not worse, to be a hidebound conservative and stick to old drugs that have nothing in their favor but reputation of age, but which have been proven by numerous pharmacologic and

clinical trials to be worthless. Only the man with an open, unbiased mind can be a successful physician. But what a rare treasure an open, unbiased mind is!"

We will go a step further than Doctor Robinson. In our opinion, it is the *duty* of every competent physician—and every doctor should be competent if he is to practice medicine—to give a faithful, conscientious trial to every remedy that shows promise of substantial merit; *always keeping in mind the best interests of his patients.* Pope's celebrated epigram,

Be not the first by whom the new are tried.

Nor yet the last to lay the old aside.
contains much worldly wisdom. However, someone must be first. If not you—then who? If nobody is to try the new drugs, or if only the scholastically elect, we shall soon be at a standstill. Progress involves mental alertness on the part of those who "follow" as well as those who lead. And in this ages-old advice to shun the new, I am reminded of the damsels of our childhood rhymes who was admonished by her cautious mother to

"Hang your clothes on a hickory-limb,
But don't go near the water."

Commenting on the statement of a New York doctor, that people can avoid taking the grip by keeping their mouths shut. The Houston Post cruelly remarks that they can also avoid making fools of themselves by doing the same thing.

"INTELLECTUAL CONFLUENCE"—OR, EACH FOR ALL

In his scholarly presidential address before the Tristate Medical Association of the Carolinas and Virginia, Dr. Edward C. Register made use of the newly coined expression, "*intellectual confluence*," and this term is so peculiarly suggestive that it deserves to be perpetuated. By this phrase, Doctor Register defines that state of mind "by which the ideas, discoveries, and experiences of the isolated individual seeker after truth find their way into the thought and usage of our whole profession." As the Doctor points out, "into the mind of a physician who rides on his errand of mercy in his isolated and sometimes lonely countryside, an idea falls, an experience comes—and there possibly a valuable discovery is made."

Then Doctor Register goes on to ask how such an idea or discovery may be placed at the disposal of our medical fraternity. As he clearly points out, there is not the slightest doubt that thousands of discoveries that might prove of vital interest to the world

have failed to germinate, because the soil was not provided in which these thought-seeds might develop.

"When we think," he continues, "by what a narrow margin of seeming accident most of our boasted medical science has been stumbled upon, our minds are filled with a sense of urgency to do everything to save, perpetuate, and safeguard as a golden treasure all those sometimes seemingly small contributions of experiment and experience that go to make the glory of our science." It is only when we shall be able to provide some means of *intellectual confluence*—to use the term coined by Doctor Register—that we can collect in common centers, for reference and utilization, the many happy thoughts that might be contributed by the thousands of individuals making up our medical body.

There are two principal methods by which this greatly to be desired end can be brought about to which Doctor Register refers—the first being through our medical societies; the second, through our medical journals. Both of these means are valuable, and both should be utilized to the fullest by every practitioner.

One thing that we have repeatedly urged upon the readers of CLINICAL MEDICINE is the value of this interchange of opinion through the columns of this journal. We want to make it the broad highway of intellectual confluence for the thousands of our readers who have no other adequate means of expression. We fully believe that there is not a physician—an earnest, thoughtful physician, we mean—who does not from time to time learn of something that would be simply invaluable to other physicians. Then, why does he not impart this knowledge? It is his duty to do so, and the means is within his reach.

We are glad that Doctor Register, in his splendid address, brought this matter again so powerfully to the attention of the medical profession. His paper should be read by every physician and its advice taken to heart. It is not the "big men" in the profession alone who can teach us; there is many a "cross roads" country doctor, practicing in some out-of-the-way country district, far from the medical centers, who could give vastly more of practical advice to the rank and file of us than can many of our learned professors and bookwise "authorities."

CLINICAL MEDICINE aims, above everything else, to be helpful to the man in the field. If it has succeeded in that aim, it is mainly because its alert readers have wisely made of its columns a means of confluence,

a thesaurus, or treasure-trove, of the experience of the great number of busy men who have found in its open pages an opportunity within for telling their pregnant stories.

The men who are busy miss half of the woe that's hunting for victims to slay; they get all the cream in this valley below while idlers subsist on the whey; while fortune kicks others she'll give you a kiss, you'll win more applause and you'll know more of bliss, if you always keep pegging away.—*Walt Mason*

OUR FRONTISPICE

The picture shown in our frontispiece is a reproduction of a painting by Mlle. Michaud, which was hung in the Paris salon two years ago, we believe, under the name "La Petite Malade"; that is, "The Little Patient." So far as we know, it has never heretofore been reproduced in this country. This copy was procured by us direct from our correspondent in Paris.

We hope that this picture will have a special appeal to many doctors and doctors' wives. We know nothing about Mlle. Michaud, the artist, but we are sure of this: she has really been in the sickroom and can appreciate the task of the doctor and can sympathize with those in sorrow and distress. The picture tells its own story. Look at that anxious mother's face.

If any of our readers desire copies of this picture suitable for framing, we shall be very glad to send them reprints, on good paper, mailed flat, at 10 cents a copy.

LET'S GET ACTION ON THIS

During the last thirty days we have added more than five thousand new subscribers to our list. We want to make these brethren feel at home, and we want to show them how we all can and do strive together for the common good. Also, we want to get them into the habit of working with us. CLINICAL MEDICINE is a favorite with its readers because its columns are thrown open for the free interchange of opinion on all topics of practical interest—particularly as regards the therapy of every-day diseases. We know that thousands of you men out on the firing line can give us "cards and spades" on the handling of many troublesome ailments, little and big. Please consider this the heartiest, friendliest kind of an invitation for you to send in your contributions. The only conditions we make are that you cut out religious, political, and sectarian controversies, get right down to brass tacks, and write briefly and to the point.

In order to start the ball rolling, I suggest that some of you—many of you—tell us something about your practical experiences with the contagious diseases of childhood—scarlet fever, measles, whooping-cough, mumps, and the like. These are very common during the spring months. However, if there is some other topic that appeals to you more, go to it. The essential thing is to get action, and get it quickly. The time is short, and we want many of these short, snappy articles.

You, too, are included in the invitation, new subscribers—and "welcome to our city!"

ARMA VIRUMQUE CANO

Dearly as we may love peace, we must sooner or later realize that it is an impossibility without the mutual respect of all parties involved. The idealist may theorize on what human nature ought to be, and, indeed, the more he insists upon his ideals, the nearer we shall approximate thereto; still, in the end, old human nature—the Old Adam—remains the same.

It is, surely, instructive to study the Maxims of Ani, dating from Egypt's fourth dynasty (about a millennium before Eve presented Adam that disastrous apple-pie), and note how many of the wise saws of that ancient philosopher are applicable to the present-day generation. Take as an instance the warning the sage tenders the remote ancestor of Rameses, when Potiphar's wife sends word that her "old man" is away on a journey and that it will be safe to run up for a "cold bottle, a hot bird," *etcetera*. Compare with almost any daily paper of today—and you will agree that men and women are very much the same in every age the world over.

So, when our neighbor arms himself with automatics and maxims, we are compelled to discourage any thoughts he may have of aggression, by doing likewise. To any suggestion that we may disarm his greed by forbearance and nonresistance, we tender the unanswerable reply—China!

Universal armament in Germany forced universal armament in the rest of the continent; and at last in England, after a costly lesson on its neglect. We shall be compelled to follow, sooner or later; and, if the pacifists succeed in persuading us to postpone it, we shall surely pay for this a heavy toll of lives needlessly sacrificed.

The problem is so complicated here that we can not begin its discussion too soon.

How about the southern states with their huge negro population? It is our belief that the effect will prove beneficial. The negro is amenable to discipline, and the restraints of military service should render him submissive to law and disposed to uphold authority. During the Civil War, his attitude to the ruling whites was such as to illustrate his faithfulness and devotion—in fact, there is no finer example of his best qualities than was then afforded.

With the numerous races and peoples comprising our immigrant population, no better method of amalgamating the elements can be presented than this one of military service. The men who prepare for battle, side by side, become comrades for all future time. The pride of race that leads each to contribute his share to the general fund of warlike capabilities induces mutual respect and enhances the military value of all.

What chiefly interests us is, the opportunity offered to the medical profession. Already we have demonstrated the enormous value of modern medicine to the army, and we stand ready to extend this service as the opportunities widen. All previous wars have witnessed greater mortality and disablement from disease than from the weapons of enemies—our profession now has shown that we can prevent this condition and keep the soldier sound in the ranks. We have perfected the art of the surgeon far beyond what it was in preceding wars and stand ready to furnish an almost unlimited number of proficient practitioners for our armed people. We are ready to detect the carriers of army-pestilences and to prevent the occurrence of variola, dysentery, cholera, typhoid fever, typhus, tetanus, and of the many maladies that depend upon defective sanitation. We now know the etiologic relations of the fly, flea, louse, bedbug, tick, and mosquito, and how to render these insects innocuous. We can render impure or suspected waters potable; reduce the components of a ration to their lowest denominator by excluding the inunnutritious parts; protect the army against those other diseases that reduce its fighting numbers and qualities most seriously.

The greatest task yet to be solved is, the control of that conservative opposition that seeks to prevent the applications of our knowledge, by objections based upon ancient and obsolete beliefs. According to it, we must not relieve woman of the pangs of child-bearing, because it is written that she "must bear her child in anguish and sorrow;" we must permit the innocent and the guilty

alike to suffer from venereal diseases and thus see a material portion of our armies rendered useless—lest, forsooth, the prevention of this group of infections might lead our soldiers to an increased indulgence of the sexual passion, or of its augmentation—if that were possible.

The clouds of superstition pass away but slowly—it has not been so very long since a flight of crows would prevent the giving of battle. Every step of medical progress has been made in the face of opposition such as this; while no inconsiderable portion of our highly cultured citizens still looks upon resort to tangible, comprehensible, remedial science as essentially immoral. We may here risk affronting valued friends by suggesting that the prevention of yellow-fever in the Canal Zone was never accomplished by processions and saintly intercession; yet, the true Christian will only feel the wrong of attempting to saddle his faith with such absurdities, instead of utilizing the reason with which the Creator has endowed us.

Whether we like warlike preparation or not, is scarcely the question; but rather, whether impotent China or organized, disciplined Germany is to be our model. In any event, American medicine is ready for its duties.

"It is probably true that a modified universal military training, so arranged as not to interfere with the education of young men for their future occupations in civil life, would be of advantage to this country, not only from the economic standpoint of physical and industrial efficiency, but psychologically, as a corrective of the lawlessness and ill-discipline which are among the greatest defects of American civilization."—*Boston Medical and Surgical Journal*. Do you agree?

MODERN MEDICINE IN MODERN WAR

It is perhaps too early to begin boasting, but, with the saving precaution of giving three knocks on the arm of our chair, we cannot refrain from calling attention to the freedom of this war from typhoid fever. For the first time in the world's history, the embattled armies have been left free to kill each other. With shot and shell, shrapnel and bomb, deadly lyddite and suffocating chlorine, the contending warriors are at liberty to deal death and destruction upon each other, on sea and on land, under the waters of the briny seas and under the vaulting skies, and in the stygian bowels of Old Mother Earth—everywhere. Heretofore, doing their utmost, the bacilli of the typhic group have laughed the combatant's puny efforts to scorn. Microbes laugh? Why not? Did not Virchow declare

the individual cell possessed of volition? Then why deny it a sense of humor?

However, the immunizing bacterin has completely protected the warring hosts from the attacks of typhoid fever, and in this particular this product of the modern laboratory guards the rear and leaves the soldier free to devote his energies to the enemy in his front. The record of this typhoid-prophylactic vaccine assuredly must have silenced every doubter that still remained to block the path of progress. There is no room for further argument on this score, except as to the methods of fully utilizing the wondrous powers of this agency.

It is to the American doctor that we owe the most complete, the most spectacular triumph of our day. Here, in America, we know and dread typhoid fever; still, the very name of this malignant malady indicates its resemblance to a far more dread visitation—the true ship-, jail-, or army-typhus. A feeble and rather insignificant outshoot, known as Brill's disease, is the only form of typhus recognized in this country, but in Europe it has helped to beat down the resistance of Serbia's heroic mountaineers, and laid that country prostrate.

History is repeated—Rome crumbled before the onslaughts of her northern invaders only after the plague had left her a mere shell. But, while the Teuton hosts were gathering, America conquered their potent ally. Basing the campaign on the transmission of the infection exclusively by the body-louse, our medical Xanthippus eradicated this parasite and put an end to the epidemic. Too late to save Serbia from conquest, we, yet, delivered her from the added burden of typhus.

Now our desolate southern sister "republic," Mexico faces the same enemy, and it would seem to one who places common sense before all else that a similar conquest of typhus there would excuse the temporary occupation and administration of the distracted state that would be necessary for attaining that object.

Another outcome of modern serotherapy seems likely to be established by the great European war, namely, the utilization of tetanus-antitoxin as a prophylactic. Ordinarily we may question whether tetanus is likely enough to warrant the application of this remedy in every instance, when a wound seems capable of affording an avenue for ingress for this infection; but, in military hospitals, it is different. There, the tetanus infection may become universal, and, thus, the prophylactic value of the serum may be fairly established.

The enormous demand for iodine that has sprung up since Major Woodbury directed attention to the value of this agent has caused a hunt for substitutes. Bromine, tried out successfully in the latter years of our Civil War, is finding renewed utilization by German army surgeons. More abundant and cheaper than iodine, it is also more powerful as a germicide, although it demands more care in its use, to avoid undesirable effects.

War is surely hell. But, when the doctor does so much to alleviate war's miseries—while modesty forbids us doctors to claim angelic attributes—we may at least think of ourselves as not wholly satanic.

Be like the happy man who had
A big cucumber vine,
And when a white worm ate it off
Did he sit down and whine?
O, no! he took that hearty worm,
Went to the lake and caught
A monstrous fish that sold for more
Than the vine would have brought.

—Chester Wood in The Nautilus

NEW IDEAS ABOUT DIABETES

We particularly urge our readers to turn to the rather long abstract of some recent work on the treatment of diabetes, which will be found in this issue in the What Others Are Doing Department. As we have there pointed out, Dr. Frederick M. Allen, of the Rockefeller Institute, has been doing some very remarkable investigative-work upon this disease—work which has a basis of experiments with animals, but also has been worked out on a clinical scale sufficiently far to warrant fully the enthusiasm that is being lavished upon it.

While Doctor Allen's method of treatment is largely dietetic and does not involve, necessarily, the additional use of drugs, this subject is of such vital importance to the thousands and thousands of persons suffering from this disease that we wish every reader of CLINICAL MEDICINE to understand fully the method proposed, so that he can put it to the test in his own practice.

It may be—and undoubtedly is—too much to hope that a victim of diabetes can be cured; nor do we understand that any such assertion is made by Doctor Allen. What he does show, however, is that a very large percentage of these patients can be taught to live comfortably and to prolong their lives despite their affliction, provided they are able to control their dietetic regimen and to maintain a certain firm disciplinary hold

upon this all-important function of life—nutrition.

There is one thing about the Allen treatment which we are sure will appeal strongly to all the oldtime readers of this journal, namely, the insistence upon the importance of the alimentary canal as a factor in the production of its symptoms. The theories advanced by this investigator seem to us quite compatible—in fact, almost synonymous—with our years-old slogan: "Clean out, clean up, and keep clean." This contribution only strengthens our faith in the importance of watching closely the condition of the alimentary canal, in diabetes as well as in practically every other serious acute or chronic disease.

AN EARLY ADVOCATE OF ANTISEPTICS

Some two centuries ago, Bishop Berkeley published an essay in which he called attention to the medicinal properties of tar-water. At the time of his investigations, the Bishop was a resident of Newport, Rhode Island; consequently, we have here a true American discovery—made in America, with an American product. Moreover, Berkeley was one of the earlier arrivals of that immigrating people who have made so deep an impression upon our national life, the Irish Americans. (No hyphen, please!)

In "Siris," Berkeley made use of the following expressions, which now appear strangely prophetic:

"The seeds of things," he wrote, "seem to lie latent in the air, ready to appear and produce their kind whenever they light on a proper matrix . . . the air, every part of which seems replete with seeds of one kind or other. The whole atmosphere seems alive. There is everywhere acid to corrode and seed to engender."

In another place he says: "As the nerves are instruments of sensation, spasms in the nerves may produce all symptoms." And again:

"Tar-water is of great use for the nerves, curing twitches in the nervous fibres, cramps also, and numbness in the limbs, removing anxieties and promoting sleep."

Further on, the philosophic, yet, practical, bishop advises the use of tar-water as a substitute for the indiscriminate resort to alcohol, which he condemns emphatically, and especially voices his warning against intoxicants disguised as medicine. Our presentday protestants evince no clearer comprehension of the true inwardness of alcoholic nostrums,

like Peruna, than Berkeley did, the philosophic cleric, when writing, around 1715, in the log-house village of Newport.

Yet, it was not by accident that this profound thinker and prophetic seer had selected Rhode Island for his residence; for the historian, Ridpath, informs us that more than half a century before that date—in the year 1656—Dorothy Waugh, a Rhode Island Quakeress, was drummed out of New Amsterdam, tied to the tail of an ox cart, because she persisted, after due official warning to desist, in preaching in the streets of the town.

But, back to our story: Bishop Berkeley recommended tar-water for persons of delicate sensibilities, for those affected by low spirits, for splenics, for persons of sedentary habits. Incidentally he instances how he personally obtained relief from "nervous colic," which had rendered life a burden.

Thus, in this book of long ago, we find embodied some of our presentday beliefs—the modern beliefs—see clearly foreshadowed discoveries and developments of modern medical science by full two centuries. The bishop recognizes the ever present micro-organism; he also devines that dependence of disease in general upon the nervous system as nowadays insisted upon by the neurologist. He has acquired an effective antiseptic for use in gastrointestinal derangements and has found that this may give relief from such symptoms as mental depression, general malaise, and the like, which we now attribute to autotoxemia of gastrointestinal origin.

The modern belief that affections of the nervous system have their beginning in the feeding of the nerve-cells with feces-contaminated blood dates from Sir Lauder Brunton's teaching; yet, Berkeley directed attention to this thought.

It seems curious that this very practical observation should come from the man who, in his philosophical moods, contended that "matter has no independent existence, but is an idea in the supreme mind, which is realized in various forms by the human mind."

Moreover, at that early day, Bishop Berkeley predicted the coming greatness of America; and, in his poem entitled, "On the Prospect of Planting Arts and Learning in America," there occurs the fine stanza that has ornamented so many patriotic outbursts of oratory:

Westward the course of empire takes its way;
The first four acts already past,
A fifth shall close the drama with the day;
Time's noblest offspring is the last.

Leading Articles

The American Clean-Up of Serbia

By the American Red Cross Sanitary Commission

By G. A. LURIE, M. D., Chicago, Illinois

EDITORIAL NOTE. Doctor Lurie is a Chicago physician who served with the American Red Cross Commission in Serbia during its campaign against typhus fever, cholera, smallpox, and the other infectious diseases which swept through that country. His story is a true record of the heroism of American doctors, nurses, and sanitary experts. No reader of "Clinical Medicine" should fail to go through this carefully.

UPON the suggestion of the editor of CLINICAL MEDICINE, I will attempt to sketch briefly some of my experiences during the five months I was with the American Red Cross Sanitary Commission (Rockefeller Commission) in Serbia; to which I (the only physician from Chicago) became attached in the first week of June, 1915. I continued with the Commission until the middle of October, when, our task being practically finished and that suffering country cleaned up, in a sanitary sense, and the Commission largely disbanded, I proceeded to Paris, there to join, temporarily, the American Ambulance Hospital.

The typhus epidemic in Serbia was spread by the refugees coming from the north with the first invasion of the Austrian army, together with the prisoners, thus increasing the crowded conditions and making them ideal for typhus. Arriving at headquarters, my first assignment was to Tetova, with a Mr. Standifer as my associate; the latter for seven years a sanitary inspector in the Canal Zone. There our duty was to inspect and disinfect every house, barn, and carriage within a radius of seven miles, and also to inspect the hospitals, barracks, school houses and other public buildings in surrounding villages for smallpox, which was prevalent at that time. Of course we each had an interpreter. To tell the truth, the houses were filthy beyond description and swarmed with vermin and contagion.

Vaccinating Against Smallpox, Cholera, and Typhoid

I was also tasked with vaccinating against smallpox every individual within our district, including soldiers, schoolchildren, mothers, and babies, besides all of the town and

county officials. The soldiers' barracks were the worst of all in point of filth, apparently not having been cleaned since the beginning of the second Balkan war.

After about two weeks there, I was sent to take charge of the vaccination ward in the second reserve military hospital at Uskub; and here we—another physician and I—broke all records for rapid-fire vaccination. We had to vaccinate—using Castellani tetravaccine (cholera, typhoid, paratyphoid A and B)—the soldiers quartered here prior to their leaving for the front; and we two thought nothing of disposing of 1200 men in the space of three hours.

The men's arms were washed, in readiness for the operation, by an Austrian prisoner, in private life a professor of philosophy. Another assistant for this work was a little Serbian lad, aged 14, who had been living in Austria. He ran away from home, got caught between the fighting lines, and was taken prisoner by the Serbians.

Bathing and Disinfection

Next I was assigned to the bathing car. This is a unique and effective disease-preventive. We "cooked" about 300 men a day. The soldiers were told to strip in one car, then they were herded, 15 at a time, into the bath-car and the key was turned on them. For fifteen minutes they were soaked in live steam of rather high temperature. Then the men were ushered into another car, where under supervision they were forced (force was necessary!) to wash themselves well with hot water and soap, in preparation for a cold shower-bath.

A freight car which had previously been used as a refrigerator was used to steam the clothes, thus making an autoclave. The



The American Red Cross Sanitary Commission in camp at Velis, Serbia.

steam was generated in the next car, which contained a boiler. The clothes were steamed for ten minutes and then sprayed with a disinfectant composed of a creolin preparation diluted with H₂O. Before dressing, the men were required to rub themselves down with kerosene and saturate their hair. After this the interpreter delivered a lecture on the sterling virtues of taking an occasional bath.

Then I was assigned to Doctor Castellani's clinic at Skoplje, where I stayed two months. This Italian scientist, who is one of the world's best tropical-disease experts, was in his glory. Among other things, he discovered the microbe of sleeping-sickness. (At times we strongly suspected that this microbe was at work in Serbia, although we could never actually find it.) It is surprising how much tropical disease we found. We have had epidemic after epidemic of malaria, and with it a scarcity of quinine. One hospital in Gengelia resembled an insane asylum, all the patients suffering from malaria, shaking, shivering, and going through various acrobatic maneuvers, craving for just one bit of quinine. Tuberculosis is also very prevalent.

A Fight Against Typhoid Fever

Next I was detailed to go into camp at Prishtina, to investigate the typhoid epidemic at Novovaros and surrounding villages. Here I found sanitary conditions almost as bad as they well could be, especially in the prisoners' quarters, which were condemned. In Prishtina, four stables were disinfected and whitewashed, the ground floor leveled and a building erected for lavatory, bath and laundry purposes. A room was made in each one for 300 prisoners. Here also barracks, schools and homes, as well as hospitals, were disin-

fected. In the latter the beds were cleaned, the old straw in the mattresses burned and replaced with fresh straw, and the bed clothes cleaned in an autoclave.

As a matter of fact, sanitation is practically unknown in Serbia; and so it is that, for instance, vessels containing milk are habitually left uncovered, thus allowing free access to flies and other objectionable things, and paving the way for epidemics.

As a rule the people were extremely hospitable, and I found them anxious to assist in stamping out an epidemic. However, in one place where typhoid had been reported epidemic (any rise of temperature would be called typhoid), although it turned out to be diphtheria, I had to stand, virtually, over the people with a club, to induce the families to clean out their wells and homes and open their windows, as they thought they would catch cold; also to build drains for the numerous pools of stagnant water, which had to be petrolized. Then the prefect, who is the mayor of the village, was instructed as to the value of disease-prevention, hygiene and sanitation, and was given several practical lessons on putting this theory into practice, by taking him to one of the homes.

Sanitary Precautions Unknown in Serbia

The Serbians knew nothing of the necessity of careful garbage and sewage disposal. All the streams were polluted and had to be cleaned out. Flies are considered almost as pets, well worth having about the house. A Serbian family often sleep in the same room with pigs. This is not considered conducive to good health in America.

Most Serbian houses consist of one room with a plain wood floor, where the cattle

sleep, the people thinking more of their cattle than of themselves. At one end of the house there is a small vestibule with a clay floor, in which there is a fire. As there is no chimney, the smoke goes out through the door, the roof being darkened by the sparks and smoke. Ten or a dozen—sometimes as many as twenty-five persons—sleep in this clay-covered vestibule, lying on a dirty homespun blanket near the fire.

After the first of October the windows are kept tightly closed all night, for the Serbians



Dr. T. W. Jackson, Chief Sanitary Inspector.

fear that they will catch cold if they inhale one breath of fresh air after dark. In the mountainous districts clocks are unknown, time being told by the first evening star. In spite of these unhygienic conditions the people are strong, and display wonderful endurance. They go barefooted in zero weather, apparently without minding it.

Today there is no typhus in Serbia. However, the epidemic will probably return with the cold weather, but this time it will be kept under control. Nearly everyone in Serbia has had typhus, so most of them are now immune. I found records in the villages where I worked showing that whole families of 15 or 20 persons had been swept away by this disease, not being attended by a physician. In one house near Prishtina there lived 40 persons, and of these 19 died of typhus. In Bardovetz there were 1400 Austrian prisoners. These were confined in stables, and more than 1000 died. Men fell and died like flies, some of them dropping by the wayside going to their meals.

Eventually every well and every other source of water supply in Serbia was examined by the doctors and inspectors of the American Sanitary Commission, and those found polluted were thoroughly cleaned. All contaminated wells were placarded, the people being forbidden to use them until the condition was corrected. Also, every stagnant pool was petrolized, to prevent the breeding of mosquitoes.

The People and Their Country

The war has left the inhabitants in a state of squalor and want. Thus, horses and even saddles are a rarity, and, in going from one village to another, I generally had to foot it, although sometimes I had a mule for a mount, with a piece of hemp for reins. Once I had to ride that way many miles to headquarters for some diphtheria antitoxin. On another occasion, with a medical missionary from China as a companion, I rode for thirty-two hours in a springless wagon, called a "britchka," with a few handfuls of straw thrown on the floor for a bed. Nor were personal comforts any better. Most of the time I slept in a stable, sometimes with nothing but a log for a mattress, some Chicago newspapers for a pillow, and my raincoat for a sleeping-bag. While at Novovaros I never saw butter;



In the hair-cutting camp at Prishtina.

for one whole week I had to live exclusively on eggs and milk, meat being unobtainable.

I found the common people in the mountainous districts of Serbia very ignorant of personal hygiene. Drugs were not to be had anywhere, nor even known. I carried the most necessary drugs about with me, pur-



Vaccinating troops against cholera and typhoid fever prior to their departure for the front. We vaccinated 1200 in three hours.

chased at my own expense, for the purpose of distributing them to those peasants who were in dire need. Strange as it may seem, many families whom I visited had never heard of a doctor, and thought I must have descended from heaven. One time I was stopped by a poor woman, who went down on her knees and begged me to attend to her son, a 19-year-old youth, whose leg had been broken three weeks before. I had to improvise a splint out of the bark of a tree, padded with raw wool, there being nothing else available.

I also encountered some terrible cases of ulcers and wounds which for years had received no other care than applications of dirty green leaves; it was the rule, instead of bandaging, for mothers to treat the wounds of their children by applying herbs and leaves. And so it went. It made me sick at heart to see all around such misery, such suffering, and, withal, such ignorance of the simplest tenets of civilization, these people living as they did centuries ago. Let us hope for better days in store.

An Adventure and an Injury—Attacked by Bulgarians

On September 1, I left Novovaros for Uritza by post-wagon (a fourteen hours' ride), with an escort of four gendarmes. En route, the party was attacked and fired at by a band of Bulgarian comitjadas. One of

the gendarmes told me to take his horse, and I galloped away at a terrific speed. In hurdling over an obstacle that had been placed in the road, my horse fell on top of me, causing an injury to the left eye and bodily bruises, with blood oozing from face and hands. I was treated in the hospital at Uritza by Doctor Cheatle, of Rockford, Illinois, where I was laid up for two weeks the left eye being closed for ten days.

On another occasion I made a vaccination-tour, in company with another doctor, on a hand-car. On this trip we vaccinated some 1500 soldiers, between Veles and Ghevigli. The vaccinations were made in wooden huts stationed along the railway. As usual, the Bulgarians did not forget to utilize the opportunity, and, while we were traveling on the hand-car, my left ear was wounded and my hat literally riddled by bullets. One of the soldiers who was pumping the hand-car was shot in the hand and we had to assist in pumping.

Arriving in Skoplje after the perilous journey from Novovaros, I had a talk with General Popovitch, and I advised him to make preparations for the impending trouble with Bulgaria, as the secretary to the Russian embassy in Constantinople had told me in Novovaros that the Bulgarians were coming within 30 days. Also, while in Nish, I heard the noise of the cannon bombarding Belgrade



1. Doctor Taylor, of Panama. 2. Doctor Castellani. 3. Doctor Lurie.

and saw the flashes at night. I actually was supposed to be there at that time, but had previously been warned by the ministers at Nish not to go.

The Terrible Epidemic of Typhus

To recur to the prevalence of typhus fever in Serbia. Typhus is endemic in Serbia because of the exhaustion of the people from the many wars, and their ignorance and lack of instruction by their physicians, the number of whom has been lessened.

The recent typhus epidemic commenced in December, 1914, and lasted until July, 1915, and was the most severe in European history. Its spread was due to the unpardonable neglect of the Serbian civil and military authorities—a neglect which we here would punish as criminal. It would be utterly impossible to estimate the number afflicted with the disease, as many died unattended by a physician, and others recovered, also unattended. Besides, the statistics are not reliable, as any rise of temperature would be diagnosed as typhus. The military reports do not include the civilian population.

Out of a population of 3,000,000, in Serbia proper, including about 50,000 prisoners of war, one out of every four was

affected. The mortality in hospitals was as high as 50 percent. However, the number of cases of typhus must be an estimate only, since even many of the Serbian physicians diagnosed typhoid as typhus. The hospital and civilian population suffered from the lack of physicians and orderlies, thus making it very difficult to control the dreaded scourge. The mortality was terrible, and, in the community under my observation, to dispose of the dead, 10 to 15 ox carts, piled with coffins, made trips to the cemetery three times a day. The better class of people escaped the infection, as their hygienic conditions were better, all classes and professions were affected. The American Red Cross and the foreign units managed their hospitals



Visiting the boys at the Columbus University Camp. Schoonmaker, of Harvard, at the wheel.

very much better as to system and discipline than the native organizations.

The medical profession in Serbia suffered immensely, due to their exhaustion and over-



Austrian prisoners making lime. The man marked with a cross is a doctor of philosophy.

worked condition resulting from the care of the sick and wounded. Out of a total of 350 Serbian physicians, 175 succumbed to the scourge. Five American physicians were also added to the number of heroes who sacrifice their lives as heroically as those in the trenches. Out of 15 American nurses, 10 were affected, though, fortunately, none of them died.

During the second Balkan war typhus invaded Serbia, and subsequently has not been completely wiped out. The people were exhausted, and, as the army retreated, the civil population followed, thus overcrowding the already congested southern districts.

Bathing facilities were unknown to the peasants and lacking among the better class. These crowded and unhygienic as well as unsanitary conditions, together with the oncoming of the exhausted, starved and vermin-infested prisoners, who were distributed in the southern part of Serbia, made the situation ideal for the spread of typhus. Disinfection, quarantine, and isolation were criminally neglected. In hospitals two beds would be put together and three patients huddled on them. Every hospital was a hotbed of infection, as typhus patients were scattered among the wounded.

Much credit must be given to the world-wide-known sanitarian, Dr. Richard P. Strong, our director of the American Red

Cross Sanitary Commission, who worked day and night, unceasingly, getting transportable disinfecting and bathing apparatus to localities where they were most needed. It was he who devised the method of bathing soldiers in a freight car improved by installing 15 shower baths, and which was transported from town to town with the other two cars used for steaming the clothes at 250 degrees for ten minutes.

In the general cleanup a thorough sanitation of cities and villages was conducted, bath houses built, sewers dug, proper disposal of garbage and sewage demanded; school buildings and convents which were turned into hospitals were gradually abandoned and the patients put into hospitals in wards designated for them. Thus the spread of typhus was rapidly brought under control; and, as the warm days came, the soldiers, prisoners and civil population sought the open air and sunshine, leaving their crowded quarters and giving plenty of opportunity for personal as well as community hygiene.

I will close here by saying that I had the pleasure of a conference, in the University of Columbia camp at Nish, with Doctor Plotz of typhus-bacillus fame. At this interview, the Doctor informed me that an epidemic of typhus fever was likely soon to be prevalent again, and that he was organizing vaccination-stations in different districts throughout Serbia.

Hematuria and Its Treatment

By CHARLES J. DRUECK, M. D., Chicago, Illinois

HEMATURIA (i. e., the presence of blood-corpuscles in the urine) is always pathological, and it appears in a number of different conditions. The blood may come from any part of the urinary tract, and sometimes the determination of its source is quite easy; still, at other times, this is very difficult, if not impossible. Not infrequently the physician is pinned down by the patient or his friends to name a definite diagnosis; where, however, this happens to differ from what has been previously offered by some other medical attendant, it disturbs the confidence of the patient. An example of this I shall cite further along, this happening in the case of a child which had been afflicted with hematuria for about a year and which had been said to be due to kidney disease. When I diagnosed cancer of the kidney, the family were very skeptical, and it was only after the

mother felt the tumor that she accepted my judgment.

The character of the blood in the urine and its time of appearance, whether clotted or diffused, profuse or scant, and its relation to the act of urination differ, and will indicate somewhat the part of the urinary tract involved. The chemical reaction of the urine also affects the color. (Acid urine is dark-red, while alkaline urine containing the same amount of blood will be bright in color.) Of course, if the amount of blood is small, it may not materially influence the color of the urine. However, the albumin-test will demonstrate even very minute traces of blood.

Guyon (see White and Martin) divides the causes of hematuria into trauma, congestion, inflammation, organic disease, and presence of foreign bodies. Sometimes the pathology

seems hardly sufficient to create the disturbance in the case at hand.

The amount of blood in the urine is variable. If slight, it may not show microscopically; but, if profuse, the urine appears bloody. The microscope is always required to verify the clinical picture. If the urine contains pus as well as blood, the blood will be found in the sediment, the liquid part of the urine being left uncolored.

The more dilute the urine is, the less rapidly will the blood clot, but also the more rapidly will it diffuse and dissolve. Blood clots in the urine have but little diagnostic significance except when they are of the long, thin cylindrical variety. The latter resemble earthworms in appearance and are formed in the ureter. Short cylindrical clots are without significance. The color of the clots varies from yellowish-red to dark-red. The fibrin clots closely resemble broken pieces of cancer-tissue.

We will divide the sources of hemorrhage into (1) the kidney, including the ureter; (2) the bladder, and (3) the urethra. Let us now consider the causes in each class and draw the differential picture.

Hemorrhage From the Kidneys

It has been said that renal hemorrhage is more protracted than bleeding from the bladder or urethra; but that is uncertain. In all diseases of the urinary tract, the periods of bleeding become more frequent and intense as the disease advances.

1. In chronic diffuse inflammation of the kidney, there is no hemorrhage.

2. In the following conditions, the hemorrhage is slight, and it subsides as the other symptoms are relieved: Acute parenchymatous nephritis (this is frequently the result of accompaniment of variola or scarlet fever), amyloid degeneration, abscess, embolism, hydatids, purpura hemorrhagica, phlebitis (uterine or crural).

3. In this group, the hemorrhage is profuse and obstinate. Cystic disease of the kidney, chronic interstitial nephritis (here the hemorrhage frequently alternates with hemorrhage from mucous membranes), malignant disease (hemorrhage here is brought on by slight or undiscernable cause; it is made worse by exercise, but is not much relieved by rest).

Guyon says that the hemorrhage of kidney tumor is intermittent. It will stop and then suddenly reappear, the variations occurring frequently. Sometimes the ureter is blocked by a clot and the urine is clear for a few

hours, then the clot is suddenly released and the hematuria appears. The presence of renal casts shows positively that the blood is from the kidney. Tuberculosis of the kidney shows an intermittent hematuria, which is brought on by exertion; but the urine contains pus and debris, which remain in solution and do not tend to settle out. Pain is also present, but is variable, though sometimes amounting to a true renal colic.

The hematuria of renal calculus is excited by the slightest muscular strain or violence, such as under normal conditions would not cause any disturbance. The bleeding is promptly relieved by rest in bed. There is always more or less pain and renal colic, which is reflected from the lumbar region in various directions. The pain of renal colic is quickly relieved by rest in bed, but not the pain of tuberculosis or tumor.

4. Drugs may also cause hematuria, such as oil of turpentine, carbolic acid, cantharides, and mercury. It must not be forgotten that senna and rhubarb cause a reddish-brown color of the urine simulating hemorrhage.

5. In severe injuries and malignant disease, the blood may be bright-red and the hematuria may appear to be terminal. In trauma, the location and character of the injury will determine somewhat the source of the blood. That is, a kick in the back followed by hematuria would suggest a contused or lacerated kidney, while a blow on the abdomen, and particularly in the hypogastric region, would indicate a ruptured bladder. A heavy, dragging sensation due to the renal congestion sometimes precedes hemorrhage from these parts, or an attack of renal colic may appear. These pains do not occur in connection with hemorrhage from the bladder or urethra.

Hemorrhage From the Bladder

Associated with bladder lesions that cause hemorrhage, we usually find cystitis and an alkaline urine, and, if so, the mucopus and phosphates so cloud the urine as to alter its appearance and prevent the easy detection of blood. When the urine is ammoniacal, the hemoglobin is frequently dissolved out of the corpuscles, and the cells are then called blood-shadows. These are sometimes confusing when found in the urine. They appear as small bodies or rings of the size of red cells and have no nucleus.

1. The hematuria of vesical calculus is terminal and the blood is fresh. The hemorrhage is moderate unless prostatic disease complicates. (2) In prostatocystitis and (3)

in vesical tuberculosis there also occurs slight terminal hematuria, and in this symptom closely resemble calculus. (4) Polypi of the bladder and (5) fibrous tumors usually show slight or moderate hemorrhage, but (6) villous growths bleed profusely and the blood forms a reddish-brown sediment. A vesical tumor, so long as it is not near the bladder-neck, may not show any other symptom besides the hemorrhage, and it is not palpable in its early stage; hence, the hemorrhage is frequently considered renal. Of course, if the colic or some other localizing symptom appears, that will determine the source of the bleeding. (7) Varicose veins of the neck of the bladder sometimes rupture and cause quite a sharp, free hemorrhage.

A cystoscopic examination must be made in all doubtful cases of hematuria. When the hemorrhage comes from the bladder, there will be, besides the visible blood, frequent micturition, as also pain in all inflammatory, obstructive or traumatic cases. A bimanual examination will frequently detect changes in the bladder-wall or prostate gland or the presence of a tumor. Vesical tumors ultimately necessitate catheterization, and then cystitis is soon added to the clinical picture. When the blood is diffused throughout the urine and the last portion of the urine contains a quantity of pure bright blood, it is probably a vesical or prostatic bleeding.

Hemorrhage From the Urethra

Hemorrhage from the urethra usually precedes the flow of the urine and also recurs between the acts of urination; but, if it does not, it may be squeezed out by stroking the urethra.

1. In acute gonorrhea, mild hemorrhages may occur in any case.

2. Acute posterior urethritis presents only terminal hematuria.

3. Chancre within the urethra sometimes causes hemorrhage that may be obstinate and recurrent.

4. Neoplasms and injuries of the urethra sometimes cause a hemorrhage that may be alarming.

In any case of hematuria, the signs and symptoms other than those of the urine itself must be considered, because the trouble may be outside of the urinary system. Blood appearing at the beginning of urination (initial hematuria), the later urine being clear, must come from the urethra. If the bleeding is from the prostatic urethra, it may flow into the bladder, and in this con-

dition the last urine is often almost pure blood (terminal hematuria).

The Treatment of Hematuria

The great variety of causes of hematuria divide themselves into those that must be treated therapeutically and those that can be arrested mechanically.

During the bleeding, the management consists in: Rest in bed, a liquid diet (buttermilk), and diluting drinks, in order to lessen the tendency to coagulation and promote a soft, free stool. Drugs by mouth are of doubtful value. Guyon gives oil of turpentine, 3 drops every four hours for six or eight doses. Ergot in full doses is also recommended; oil of erigeron and gallic acid have also been used. Any of these may be of value in moderate and persistent hemorrhage. In sudden profuse bleeding that threatens to exsanguinate the patient, give a full dose of morphine, to quiet the restlessness and anxiety. Next, empty the bladder with a catheter or suction-pump, as needed, and then irrigate with a hot antiseptic solution of silver nitrate (1 : 2000) or fluid extract of hydrastis, 1 ounce to the pint. After this, the catheter should be held in the bladder until the bleeding ceases. [Emetine is being used successfully.—ED.]

If this does not control the bleeding, a perineal cystotomy should be performed, all clots removed and a drainage-tube inserted. This must be done under the most rigid asepsis, because the bladder is very liable to infection after the hemorrhage, and particularly so in cases of tuberculosis or neoplasms. Prostatic hemorrhage is often relieved by opium suppositories, as also by suprapubic compresses.

In conclusion, I wish to cite a few cases that may be of interest in this connection.

Case 1. C. H., a boy 12 years old. Four years previously he was vaccinated, and from that his parents date his trouble. About two years afterward, he had a hematuria, slight as to amount, every two days, for about a month. During this time, the parents say, he appeared healthy otherwise. For the next year, he had occasional attacks of hematuria, but most of the time the urine was normal. There is no record of the urine at this time, except the parents' statement. For about a year now the blood appeared constantly in the urine and increased in amount, until recently it was nearly always present and in large amounts. The urine at best was heavy and smoky-brown in color, and at times it seemed to be largely blood.

As his mother put it, "It is pure blood that runs from him." During the first year of this boy's illness no positive diagnosis could be made.

About six months ago a tumor of the right kidney became palpable and continued to enlarge until it nearly filled the right side of the abdomen. The boy suffered very little pain, experiencing only a dragging sensation in the region of the kidney. He became anemic and of a waxy appearance, and the features were distorted by the anasarca. One time he cut his hand with a knife, but, although the wound was one and one-half inches long and one-half inch deep, it bled no more than a scratch. During the time this boy was under my care I went through the whole list of drugs supposed to be good for hematuria, but not one had any effect.

When the boy died, we made a partial postmortem examination, when the right kidney was found of about the size of a coconut and somewhat the same shape. It was soft and boggy, quite friable and easily crumbled under the fingers. The pelvis of the kidney was filled with a granulating mass, but there were no blood clots, and but very little on section of the growth. I was rather surprised at this. The liver was small and did not present any apparent secondary growths. All of the abdominal organs were very pale. Death was really due to exsanguination. No inspection was made of the chest, as the parents objected. I was not permitted to take out the tumor, but section of a small piece showed it to be a sarcoma.

Case 2. Mrs. A., formerly a nurse. Following the birth of a baby, she was taken with paresis of the neck of the bladder, which persisted after she was up and about. She insisted on catheterizing herself. Later, there developed a sharp cystitis and also calculi. Every two days she voided bits of calcium-phosphate concretions, and as these pieces

broke away there occurred considerable free hemorrhage. Sometimes this hematuria would accompany only one urination, and again would be quite free. In this way, it was intermittent, but persistent, and blood-corpuscles could be found in the urine at all times. Of course, it had a gradually exsanguinating effect.

I made a vesicovaginal opening and found the mucous membrane sheeted over with this stone deposit, beneath which the surface was ulcerated and granulating. Under local treatment and drainage, she soon recovered.

Case 3. About three years previously I had operated upon this 37-year-old man for hemorrhoids, which were internal and found so extensive that I removed considerable mucous membrane. The result was very satisfactory so far as the operation was concerned and the man has had no other rectal inconvenience since. When the bowels moved the first time after the operation (on the fourth day), there occurred a considerable terminal hematuria, and ever since then, whenever the bowels are constipated and the movements are accompanied by straining, there is danger of this hematuria. There are no other symptoms of any kind. The hematuria is always terminal and persists for the next few urinations. Sometimes it is quite sharp; and it may recur in two or three days or months may pass without a sign of bleeding. During the interval there frequently is no blood in the urine. The man frequently passes three or four months without any trouble, and once went eight months. The trouble is always brought on by constipation. He experiences so little trouble that he objects to a cystoscopic examination, hence, I have not made one. I believe this is a case of varicose veins about the neck of the bladder or the prostatic urethra, due to my operation upon the middle and superior hemorrhoidal veins when I removed the piles.

A VERY great part of the disputes in the world come from our having a very keen feeling of our own troubles, and a very dull feeling for our neighbor's; for, if the case were reversed, and our neighbor's condition became ours, ten to one our judgment would be reversed likewise.

—George Macdonald.

Hypnotics in the Treatment of Inebriety

By T. D. CROTHERS, M. D., Hartford, Connecticut

EDITORIAL NOTE.—Doctor Crothers is one of the men who always has something worth saying, and his experience with the drug addictions is very large, so that we can look to him as an authority on the subject of inebriety. Frankly, we don't agree with everything he says—and that's one of the reasons why we like his papers, and this one in particular.

HYPNOTICS that relieve irritation and nervousness and produce sleep have been used from time immemorial, and the most prominent among them is opium which relieves pain, removes the sense of discomfort and exhaustion, and encourages sleep. Dover's powder is one of its familiar preparations and this has come to be looked upon, in practice, as almost a specific for catarrhal and febrile conditions.

Morphine, hypodermatically given for affections of the bowels, cramps, and various other spasmodyic conditions, has attained an equal prominence and its action is particularly fascinating because of the rapidity and certainty of its action.

Morphine on the Battlefield

On the battle-fields of Europe, morphine is almost universally given as the first-aid to the wounded, to check shock and acute pain and relieve the profound exhaustion that follows after severe injury. It has proven to be one of the most valuable first-aids, and no bad after-effects are being noted, except in a very small proportion of cases, where the drug is evidently repellent, causing vomiting.

Persons dangerously wounded, when partially narcotized by morphine, can be carried to the rear with greater ease and comfort than when not so treated. It is found that even after morphine has been given to wounded men for several days, its withdrawal is not followed by any new symptoms.

No other alkaloid of opium or no other hypnotic has given such satisfactory results on the battle-field as morphine. In private life, it seems to be very different. Persons suffering from disturbances of digestion, resulting in acute pain and nausea, are often made very much worse by morphine, particularly after the hypnotic effects have passed away. On the other hand, the very complete relief which is given, produces a species of fascination that calls for its repetition.

Small doses of morphine exert a certain stimulating action upon the heart, together with a sedation that impresses the patient with its great value. Its cumulative action

is very marked in some cases. Thus, a patient given 1-8 of a grain of morphine once a day for several days may suddenly become narcotized and sleep two or three days, or he may become drowsy and inclined to fall asleep in monotonous surroundings. This is the cumulative action of the drug.

Cocaine is much milder in its action than morphine and is often given where the latter produces nausea. It seems to have about the same sedative action, without its irritant effects. Heroin, dionin, pantopon, and more than a dozen other alkaloids and derivatives of opium all have a hypnotic action, while some of them exert a special influence upon certain organs. They are all dangerous, because the effects are largely unknown. Thus, a physician discovered that dionin had a remarkable effect on respiratory diseases and thought it was of the nature of a specific. Further examination proved that this particular action was owing to some unknown condition, and was by no means common.

Apomorphine for Dipsomania

In cases of inebriety, apomorphine is very largely used as a relaxant and depressant in the stages of delirium and delusional excitement. This is called chemical restraint, and when the drug is given hypodermatically, in 1-10-grain doses, it is a powerful relaxant and depressant, producing stupor and sleep. Its action is so rapid, and the effects are so profound, that it has come to be a very common remedy in the treatment of acute alcoholism.

Its first effect is an intense nausea, eventuating in vomiting and possibly purging, also mental and physical depression, followed by sleep. The patient who is wildly delirious and combative succumbs at once to its nauseating and depressing effects. The heart drops, from 120 to 130 to 40 or 50 beats per minute, and the vascular tension also is immensely lowered. The stomach, bowels, and skin, all are excited to intense eliminative efforts. The patient sleeps a few hours and awakens markedly prostrated and willing to do anything his attendants may wish him. This prostration passes off in the course of two or three days.

Irregular physicians who conceal the drug impress the patient's mind with the narrowness of his escape from sudden death, and this suggestion often remains for a long time. Where the memory of the effects of this drug remain, the suggestion of the near approach to death is a very powerful factor for the future.

Attempts have been made to treat alcoholics with this drug alone, giving 1-10 or 1-50 of a grain at night time, this producing stupor or sleep, with very little nausea or depression. However, careful physicians soon abandon apomorphine as an alcohol cure, as full of danger and may cause possible collapse. In the hands of one practitioner several cases of fatal pneumonia followed the use of this drug. It evidently produced pneumoparesis. Several irregulars still continue to use it, more or less concealed. Fortunately, apomorphine is a very unstable compound and, unless used very soon after it is prepared, its effects will be uncertain or almost nil.

Morphine and Atropine

Morphine combined with atropine, 1-4 grain of the former and 1-150 grain of the latter, is a favorite combination for relieving the irritation and exhaustion following the withdrawal of alcohol. In some instances, the relief is so complete that the patient insists upon using this drug afterward, and if he finds out what it is he soon becomes a morphine-taker. In some cases, there is a peculiar sensitiveness to the drug, with little or no after-effects. This combination is more or less dangerous, and when a patient is very enthusiastic of the value of certain drugs which have been given him after an alcoholic paroxysm it is safe to assume that some form of morphine and atropine has been given.

Chloral and "Knockouts"

Chloral is one of the hypnotics belonging to the alcohol family that is given very commonly after the withdrawal of alcohol. It is a powerful narcotic in doses of from 5 to 20 grains, and in many instances it produces a certain brief excitement, followed by profound depression. On awakening a few hours after it has been given, the patient complains of intense weariness, fatigue, and inability to do anything, even the most common duties of everyday life. The hypnosis may continue for two or three nights or days, or it may pass into a low-muttering delirium or confusional state, in which the patient will call for the drug again. Insomnia usually follows when the chloral is withdrawn.

It is a very dangerous drug because of its cumulative action, and whenever given should be watched carefully. In the last years, it has come into very common use in saloons and barrooms as a "knockout" drug. A capsule containing from 10 to 15 grains is dissolved in a glass of beer or spirits, and this given to boisterous patrons and persons who become very obtrusive and excitable in the saloon or have attacks of destructive delirium. The effect of this drug, in combination with the sedative effect of beer and spirits, is very marked in producing sudden hypnosis. The patient falls down anywhere, profoundly narcotized. He is carried out, sent to the station house or put in some out-of-the-way place to recover. The interval from the time he was in a certain saloon until he awakens is a permanent blank.

Formerly, saloons doing a large business retained the services of a policeman or strong man who prevented altercations and assaults from delirious customers. Now, the too-wise barkeeper empties a capsule containing 15 or 20 grains of chloral into the beer or spirits called for, and the subject is then urged to go out or to leave the premises. In a few moments, the fellow is quiet and goes off into a profound slumber. And there is no certainty that he will ever awaken from this sleep. Many persons taken to the station-house breathe their last in the cell. The heart is unable to overcome the profound depression from the combined spirits and chloral. The same thing will happen in hospitals where chloral is given without discrimination. A degree of stupor follows that is only overcome by most heroic efforts.

Cannabis indica is another such drug. Its effects are slower, but they last a long time. When given for its hypnotic effects, to remove the alcoholic craze, it may work quickly, bringing relief and partial stupor, or it may not be noticed for several hours afterward, then there occurs a sudden profound depression, with more or less delirium.

Belladonna—Atropine

Belladonna is another of the same uncertain class of drugs, the effects of which vary. Dilatation of the pupils and constriction of the throat are always present, but with them occurs a most pronounced depression that goes down to the very verge of collapse. The heart apparently suffers most keenly, and the perturbations in its action indicate some local effect that is not very clear.

When continuously used for hypnotic or similar purposes, the effects of belladonna or

its alkaloids are very uncertain. There can be no question that for this purpose it is a dangerous drug and that a peculiar susceptibility to its effects is likely to be encountered at almost any time.

The Alcoholic Groups

In the alcoholic group, paraldehyde is probably the most valuable hypnotic to produce sleep. Its effects are very transient and more or less uncertain. Where the surroundings are favorable and the patient's mind is calmed by the prospect of long sleep, it works very well; however, its effects on digestion are more or less disturbing and irritating.

In the delirium from alcohol, it may be given with safety. Of the sulfonal group, trional, veronal, and sulfonal are most commonly used. Each of these has a peculiar action, and all of them are more or less cumulative, hence, their use requires caution and study. In small doses, they produce no visible effect. In large doses, the effect may be pronounced, the action being quick, and is followed by considerable headache and digestive disturbances. Veronal is also of this class that possibly may have cumulative actions, while these substances relieve the irritation and depression produced by spirits, they themselves not frequently cause other disorders, and are followed by symptoms which either refer to the drug itself or some latent conditions which the drug has awakened. In the treatment of inebriety, these drugs should be given with caution and for only a brief time and their particular action studied.

A number of chloral compounds, termed chloralamide, chloralose, hypnol, and dormiol, are all names for derivatives and combinations of chloral that are more or less uncertain in their effects.

The Bromides and Coal-Tar Derivatives

Of the salts, the bromides of potassium, sodium, ammonium, and magnesium are excellent sedatives and when given in large doses for a short time are followed by excellent results. The bromides, in the treatment of spirit and drug takers, have a special value, with very little after-effects. The coma which follows from their use is known as bromism, and this should be limited and never allowed to go very far. Some of the specific cures contain bromides. While under their influence the patient apparently recovers from the irritation and depression of the spirits, there appear symptoms of palsy

and paralysis that suggest a bromine origin. This condition can be readily removed by baths and eliminatives.

There is another group of hypnotics, among which phenacetin, acetanilid, pyramidon, aspirin, and also novaspirin are most prominent. Many of these are used with more or less success, but they are uncertain and dangerous when used for any length of time, and all of them may increase the very condition they are supposed to remove.

Prescriptions containing these drugs are favorites with quacks, and, while they relieve the insomnia and pain and cover up the conditions for the time, they should be regarded as dangerous.

Some of the Vegetable Nervines

Among the vegetable hypnotics, hops and sumbul are probably the mildest, although oftentimes they act with great power. They are harmless, in the sense of not disturbing the nutrition or vitality, except in a very limited degree, and can be given with safety.

Hyoscine, the alkaloid of hyoscyamus, is dangerous in alcoholism. While its effects are very pronounced and rapid, its after-effects upon cells and nerve-tissue are so marked and often so long-continued (and obviously due to this drug) that its use should be followed with the greatest of caution, and then but for a brief time. It has had a large reputation as a specific for removing the pronounced irritation that follows the removal of morphine, but there is an uncertainty in this direction, and an unexpected class of symptoms follow that suggest dangerous effects. The most prominent of these after-symptoms are: low grades of dementia, delusions, and anemia of the brain, with incoordination and a variety of motor symptoms.

Where belladonna and atropine are given in connection, there are witnessed marked palsys and very startling changes in the functional activities that cannot be accounted for as a result of the direct action of these drugs.

The coal-tar derivatives are heart depressants and should never be given to elderly persons or those who have marked heart and kidney diseases, and even then for only one or two doses.

General Reflections on Sedative Treatment

Opium in almost any form in small doses is far less dangerous than those just named; and, yet, the possibility of continuing its use must always be considered.

The attempt to treat drug and alcoholic patients by substitution of other drugs equally powerful is not followed by good results. The bromides, while producing distinct poisoning, can be readily eliminated, hence, are less dangerous. Probably of all the hypnotic measures and drugs that are supposed to have quieting effects, hot drinks, showers, douches, various forms of compresses, reclining in a warm bath of a temperature higher than the body, are the most practical and safe of all the means used. Chemical restraints and drug stupors, from palsy of the sensory and motor system, all have reactive effects, and these are to be considered.

Specific drugs of any kind for inebriety and drug taking are scientifically impossible. Up to the present time, drugs that are used conceal and cover up symptoms most commonly. Sulphate of magnesium probably is an exception. This, in many ways, acts as a sedative, by neutralizing and changing the chemical balance of cell and tissue. Long ago, gold was studied and found to be inferior to iron; but the latter, so highly extolled, has an exceedingly limited usefulness. Substituting narcotics for the irritating effects of alcohol, is not the removing of the causes, but simply a covering up and intensifying of the conditions, which would be removed if the causes were taken away.

Chemical hypnotics are always dangerous remedies, because their effects vary so widely. It is exceedingly doubtful if they can be used with any practical effect in cases of inebriety. Experience and a careful study indicate that the great variety of drugs included in the hypnotic family have a very limited action therapeutically. Empiricism has extolled them to a very high degree, but practical experience fails to show their usefulness as substitutes, correctives or remedies.

The inebriate is suffering from toxemias formed within and taken from without, and the only relief and comfort which come from the use of those drugs is narcotism, which covers up the real condition. While these

remedies have a value that is real in certain cases, there is a very narrow limit to this that ought to be recognized according to the conditions of the patient.

There are several vegetable drugs about which considerable literature has been accumulated, embodying more or less extravagant praise. Among them, are two called, in common language, the passion-flower (*passiflora*) and the bull-nettle (*solanum*). The extracts from both of these plants have a pronounced hypnotic effect, and they have been used as specifics; but practically, these effects are not uniform, and sometimes entirely absent, though sometimes positive and satisfactory. So far, little or no after effects have been noticed from their continued use. They have no cumulative action, like some of the mineral drugs, but the system becomes used to them after a while. Like extracts of hops, their value is uncertain.

Most of the vegetable drugs are more powerful in infusion, than in the form of extracts. When given to inebriates as extracts, they carry with them a small proportion of alcohol, which in itself has a decided effect often very dangerous. The list of narcotics is increasing constantly, and where the extracts are made with acetic acid the spirit effect is obviated.

Practical men are constantly looking for some comparatively safe drug of the hypnotic class. Whether they will succeed in finding it, is a question, but at present the treatment of inebriety with hypnotic drugs should be conducted with great caution and a full recognition of the possibility of doing much more harm than good.

So far, hydropathy and electrotherapy are the most prominent and safest measures to be used in this condition.

[Doctor Crothers says nothing about the sedative action of solanine, the *alkaloid* of *solanum*. I wonder if he has given it a trial. Personally I have found it as efficient as the bromides, and just as safe. We shall be glad to get the experience of other physicians regarding the treatment of alcoholism.—Ed.]



Hints About the Automobile

For the Doctor Who Runs a Car

By A. L. BENEDICT, M. D., Buffalo, New York

THIS article is written solely for the inexperienced.

In buying a car, two methods may be pursued: (1) Learn how much money you can raise on a mortgage, put that all into a car, then trust to Providence for enough more to run it. Or (2), take your average income as a basis, then estimate how much of this you can really afford to charge to transportation; but bear in mind that buying a car is only an initiation and that the annual dues in the fraternity of automobiles are from one-half to about one and a half times the cost of initiation. More specifically, the minimum upkeep cost of the smallest automobile, not considering motorcycles and cycle cars, is 3 cents a mile, distributed pretty equally among (1) gasolin (2) oil, (3) tires and (4) repairs incident to use; and insurance, garage-rent, and other items. A car costing \$2000 will have a mileage-cost of about 10 cents, while a large car, with chauffeur, will cost 30 cents per mile.

Start With a New Car

Quite aside from considerations of pride, it is better to start with a new car, as the guarantee, while not approaching in value what you might expect from general experience with other kinds of purchases from reliable firms, does have a considerable value, probably more than you can save on a second-hand car, until you have had several years' experience. No car is foolproof. Eternal vigilance is necessary, not only to protect you from serious injury or from becoming a homicide, but to keep your expenses for repairs and maintenance within a reasonable allowance. The slightest carelessness on your part (quite aside from collisions) may spoil your engine, and you may be amazed to find that what you considered the extreme of caution has resulted in a bill not covered by the guarantee, because you have done something or left undone something as to which you have no conception.

Your first car is much more liable to be damaged than are later ones, and it will wear out quicker. The mere items of tips for making it go and of charges for adjustments scarcely warranting the name of repairs, and which you will subsequently effect yourself, will probably come to \$50 or even \$100 the first year.

Again, you will probably base your conception of caution in driving upon previous experience with a horse or bicycle. That is to say, you will drive at moderate speed, follow the ordinary rules of the road, do what is reasonable and sensible, occasionally stop or turn without looking behind you, fail to realize the danger from mud, rain, mist, and so on, and consider that others on the road will look out for you as you do for them—and you will have a bad accident. You have got to know what is going on before, behind, and at both sides of the road, all the time, must keep out of the way of drivers of commercial vehicles, speed-fiends, ladies and clergymen in electrics, and drunken drivers; and you will be surprised to learn that the greatest danger of all is, not the speeder, but the slow driver, and especially the man dozing on the seat behind a team of horses which amble along anywhere between the sides of the road and turn into private driveways whenever they please. Some have, doubtless, realized that the one-train-a-day railroad is more dangerous than the one that runs trains every few minutes, but they have not come back to tell us of their experience.

For all these reasons, your first car is relatively more vulnerable and more expensive in proportion to its first cost than are subsequent ones, and so, it is a wise plan to begin with a cheaper car than you can ultimately afford. Besides you will also then have spare money to purchase accessories, most of which will cost you more in indirect damage than their price. Buying a car and adding accessories to it is more or less on the order of marrying a man to reform him; but we all do it the first year, and some accessories, possibly 1 percent of all, are really useful.

The writer started with a cheap car, with the idea of getting a better one after learning how to take care of the various organs, and he is about to purchase the fourth consecutive car of the same make, because of the conviction that transportation is not worth more than the expense of such a vehicle, and that, on the whole, he cannot better himself short of a very expensive car and a mechanic to take care of it.

One further hint of choice of car may be given. Do not get a new and untried make. Do not get one that involves novel principles or that has ceased to be manufac-

tured. The more generally used a car is, the easier it is to get repairs and parts, especially at a distance from large towns.

Trouble with Cranking and Carburetors

Let us imagine that, like most tyros, you have bought the car early in the spring; that you have learned to run it, but have not gone far enough to be troubled as to shortage of water, oil, grease or gasolin. After your first long stop, the car does not start on the first or second cranking, as the agent said it would, nor on the third or fourth, which he assigned as the extreme limit. Let us further imagine that, after 20 or 30 crankings, you have not ruptured a blood-vessel, but are still interested in the car. It is possible that just as a pig on the endless chain of a slaughter house may not have been successfully stabbed, one of the several details of the car may have been missed in the same process, but this does not usually happen.

Nor is it probable that your troubles will be remedied, as one of the interested bystanders suggests, by putting in a battery. The car really does crank just about as well on the magneto, though you will put the same truth in the opposite way, that it cranks just as badly on the battery, if you do take the trouble to get one at this stage.

The chances are that the foolproof carburetor which is "perfectly adjusted for all conditions" gives too lean a mixture of gasolin and air for starting. This is almost certainly the case if, after priming three or four times, the engine sputters and dies out.

The carburetor contains a needle-valve that is closed to air by pulling the priming-rod and also by screwing down a brass disc on the dashboard. Cranking then draws in more gasolin and makes a richer mixture. Turn off the air by turning this disc to the right, just as you would turn off any normal screw device. You will see, by raising the hood, how the connection is made. If the disc will not turn, it is because the connecting rod is locked by a nut on top of the carburetor, near where the rods join it. Loosen this slightly. Mark an arrow on the disc with a pencil and open up the carburetor 1 1-2 full turns if the temperature is below freezing, 1 1-4 if 30 to 40, 1 if 40 to 60. These arcs are merely approximate. Then prime while cranking four quarter-turns, letting the primer-wire slip back if the engine starts. If it does not start, it should do so within two or three quarter-turns more. However, with the engine thoroughly cold, there is practically no danger of "flooding," and, if the sparking

system is not in good condition, one may prime 20 times before starting.

But, the main thing is, to have a rich mixture; and, whether for starting or for increased power on hills, this is better secured by regulation of the spindle-valve than by priming. A dash-priming-cup or spark-plugs with faucets may be used for priming by direct admission of liquid gasolin; still, priming by suction through cranking in gasolin, with the air shut off from the carburetor, really works as well.

Remember that all this applies to a *cold* engine. As soon as it is heated by running, turn down the spindle-valve to, say, 1 full turn for cold weather and 3-1 turn for warm weather, or, for steady runs at high speed or even less so long as the engine runs smoothly and there is no "spitting" and "coughing." In cold weather, it is usually necessary to prime once to start even after a few minutes, and twice after about fifteen minutes.

Your next unpleasant experience, short of accident or failure to supply gasolin, water, and oil, will be that you cannot start at all, especially after kind but unskillful Samaritans have cranked for you and opened up the carburetor. The probability then is that the sparking-system is not in good condition and, in addition, that the engine has been flooded. If this latter term once is thoroughly understood, it will be of practical benefit. The figure suggests a liquid, but no amount of liquid gasolin short of filling the cylinders will "flood" an engine. Flooding signifies the supersaturation of the air with gasolin vapor, so that the mixture is not properly explosive. Hence, it is not likely to occur when the engine is cold and in cold weather, but it will occur under either or both opposite conditions after a few ordinary crankings, if, for any reason, the spark does not explode the mixture. It may happen that after you yourself are cooled off, the engine has also cooled off, so that enough gasolin has condensed to leave a properly explosive mixture, and then the next crank may start it without trouble or also the sparking-system may continue to cause failure.

The Sparker

The electric current takes its course from (low tension) magneto or battery to a set of Ruhmkorf coils; thence to the commutator, or timer, in which a roller, revolved by the engine, makes and breaks a connection with terminals on the inner circumference; thence to the spark-plugs, leaping a gap through the gasolin vapor to the outer wall of the spark-

plugs that are screwed into the solid wall of the engine, and this grounds the circuit.

There may be an inherent defect in the magneto (rare) or the magneto may have been wet (uncommon and spontaneously relieved in many instances simply by standing). Corresponding defects in the battery current are common, as from exhaustion of the charge of a storage battery or drycells, or any one of the latter (four being usually employed), or from loose connections.

One can tell by the buzz of the coils whether the battery-current is efficient; and, if the engine once is running, by switching from one to the other source of electricity, this part of the circuit can be differentiated from distal parts. A conducting wire may be broken anywhere, but this is rare and usually easily detected. A loose, dirty, greasy connection at any binding-post will interfere with the current. The first can be detected by trying to twist the terminal in the post, the latter, by inspection. Terminals to posts should be brightened occasionally with emery cloth or fine sandpaper or a file, but, if tight, lack of luster is not a common cause of failure of passage of current, while grease over a tight connection does not usually interfere and for certain posts is almost inevitable.

A Lot of Trouble-Spots to Look After

If the battery does not work, loose connections are usually easily detected, and lack of voltage can be determined for each cell by means of a tester or even by making a connection through the wet finger or the tongue. Granted that the battery is all right, the trouble is usually at one of the two ends of the wire from the magneto, one under the floor and the other in front of the dash, under the hood. It may also be under the key-plate in the coil-box. If there is no battery or it is out of order, these places should also be inspected. Next, inspect the binding-posts for the units (4 in ordinary cheap cars) under the hood, on the dash, on top of the spark-plugs, and at the timer.

Managing the Spark-Plug and Coil

If the engine can be made to go, but works unevenly, the trouble is usually at one of three places: a coil, a spark-plug, or a timer connection. Allow a moderate feed of gasoline and advance the spark, uncover the coils and hold down three at a time. If the single unit allows the engine to chug for a minute or two, the corresponding set of units may be considered to be all right. If the engine

stops or there is a siss, a cloud of smoke from under the hood and then a stoppage, the trouble is with that set of units, and, in the latter case, the particular spark-plug is probably loose somewhere.

The coils from your right to left correspond to the spark-plugs from front to back. By shifting coils in the box, if the unit that is at fault changes correspondingly, the trouble is almost certainly with a coil and usually owing to an oxidation of the coil-points. File them with a flexible nail-file (which should always be at hand) until the opposite points are smooth, flat, and bright. This procedure will be necessary every few months or often every few days, depending upon the qualities of the coil. This may be all that is necessary. If the coil is still dead—that is, if no spark passes between the points, or if a broad sputtering spark occurs, the distance between the points must be adjusted, not forgetting that there is an obvious device for setting them. As a rough rule, the points should be four turns of the set nut apart from the point at which they are just in contact, as determined by sighting between them at a light. Until you have acquired considerable experience, file and adjust one coil at a time, for otherwise you may put them all out of commission.

If, on the other hand, shifting the coils does not alter the location of the nonfiring unit, the trouble is almost certainly with the spark-plug. With the forceps (as a general rule, nothing about an automobile can be made tight enough with your fingers), loosen the nut that holds the wire to this spark-plug, then shift the wire up somewhere out of the way. Next, with a small wrench, loosen the upper part of the spark-plug so that it can afterward be removed without using a vise. Then, with the regular spark-plug-wrench, remove the base of the spark-plug.

Inside, it always looks dirty and greasy, but, if there has formed a deposit of soot, or if the two terminals inside are too close or too far apart, or if the porcelain is cracked, it will not spark properly. Unless you are expert, insert a new, properly adjusted spark-plug—three or four of which should always be carried. Use the spark-plug recommended by the manufacturer; do not try bargains or fancy types, unless thoroughly tested by disinterested persons.

Now, if the engine is hot, use about all the strength you have in screwing in the spark-plug, but be careful that the wrench does not slip, which may cause damage to other parts or hurt your hands. One of the proudest

est moments of the writer was when a mechanic told him he had got a spark-plug in so tight that it was almost impossible to remove it; but this had been inserted with the engine cold and had become set by rust. Then connect the wire. If the terminal keeps on turning after the round nut is screwed down tight, it is because a nut below, over a compression-washer, is not tight. Use a forceps for this, and do not apply too much force, lest you crack the porcelain.

Later, you can clean spark-plugs fairly well by soaking them in gasolin or carbon-solvent and wiping them, then filing the terminals and scraping out any soot. The terminals should be adjusted so that a dime can just pass between them, with light pressure. Later still, you can clean spark-plugs more thoroughly by taking them apart and reassembling; noting carefully, however, the exact arrangement of parts and studying their functions.

A spark-plug may spark all right, but the corresponding cylinder may not give efficient service, because of a crack, carbon deposit, imperfect action of valves or leakage around any of the joints of the plug. Valve grinding is something with which the amateur should not meddle, and, so, it will not be considered here beyond stating that the general opinion is that valves do not need to be ground as long as compression is good, that is to say, till the crank turns too easily. Leakage about a spark-plug can be tested by applying oil or water and watching for bubbles.

Then the Timer, Too

Sparking defects may also be owing to trouble with the timer and its connections. The rods holding the timer in place or regulating the advancement and retarding of the spark may make a short-circuit with a timer-terminal, or also a self (?) starter or other device attached beneath the timer may do the same. The timer may be dry or gummed up with oil. The one lubricant that in the writer's experience has proved satisfactory is, pure mineral oil, allowing about 1 Cc. or 1-4 dram, for every 200 miles. With this provision, the timer may go several thousand miles without being cleaned.

Even only to detect loose and greasy connections, it is usually necessary to remove the timer. While in a sense the timer is a delicate mechanism, there is no danger in removing it if reasonable care be used, particularly to observe the position in which it should be replaced by the vertical alinement of the central attachment and the oil-aperture,

and the order in which the various parts of the attaching assembly go. It is just as important, though, to keep the timer clean on the outside as well as inside.

If it becomes necessary to remove the terminal wires for cleaning, removal of grease, rewinding of the end, and so on, do so one at a time, in order to prevent confusion. Theoretically, timer trouble affects one particular spark-plug, permanently. Practically, a lump of grease and dirt or a short-circuit may come in contact with a different terminal.

Care of Transmission Brakes—Safety First

It is important to remember that, in operation, the brake, transmission and all devices controlling movement must be applied gently and gradually, in order to avoid any sudden and jerky action of the machine; except, of course, when one may have to stop suddenly. Be sure that you understand the working and principles back of all of these contrivances and the exact way in which they are operated. Until you can control them automatically, do not speed, and when crossing streets "run on neutral." Rehearse for possible emergencies. Also, get it thoroughly fixed in your mind that the "emergency"-brake is not what it is called, but is to be applied solely either for locking the car at a standstill or to save the service-brake in descending a hill. Do not take the meaning of "right of way" too seriously; rather, at the beginning, cultivate the spirit of "After you, my dear Gaston." Remember that either brake works, ultimately, by friction of the rear tires upon the road, that any undue and sudden use of the brakes wears out the tires quite rapidly, and that, if the road is slippery, no kind of brake can stop your car. Do not use the brake and the reverse together. If the emergency is so great as to warrant reversing while moving forward, at the risk of doing serious damage to the machinery, do not spoil the effectiveness of the reverse by braking at the same time.

If any of the moving and braking-devices work jerkily or do not engage, have them fixed immediately, especially before undertaking a long or hilly trip. A little slack may be easily taken up by removing the floor, the cover of the gear-case, and with a wrench turning certain adjustment-nuts. You can see how they work, by careful inspection. This is only of temporary service, and new bands will soon be required. Undue wearing of transmission and brake-bands may, for example, be due to insufficient oiling, because

the pet cock or gauge indicator is not accurately set for that particular car.

On long descents, the engine may be used as a brake by turning off the spark; the high-speed operation of the engine offering moderate resistance, and the low speed still more. The engine will crank itself upon turning on the spark; however, the accumulated gas is likely to burst the muffler. Simply shutting off the gas at the throttle will not prevent this, but it can be prevented by turning the spindle valve shut or by coming to a full stop and allowing the engine to cool, then cranking up. For example, going down a very long and steep hill, it was found that both brakes were inefficient. The road ended in a T at a state road. In this emergency, the spark was turned off and the low speed put into operation. This reduced the speed to a comparatively safe degree and the brakes held sufficiently to stop the car when level was reached. Had any obstruction been encountered, such as a wagon in the road, the reverse, which wears longer because of being less used, could have been used, with light pressure, as a brake.

The amount of oil used up by the engine differs for different cars, being more for air-cooled engines than for water-cooled, ranging from 400 miles per gallon for cheap cars to 1000 miles for the better grade. The oil level should usually be taken on a level road or floor, an allowance of several minutes being made at least every 50 miles, for the oil to gain its actual level after the engine is shut off, if the gauge level is affected by running the engine. Supply oil rather frequently and in small quantities, to prevent fouling of the spark-plugs. Always carry enough for a trip, unless it be a very long one and includes stops where a supply can be obtained. Do not spill any oil, or, if you do, clean it up immediately. Carry enough so that, if a gauge-glass breaks and the case is drained, it can be refilled.

Pet-cock gauges under the car may break from the upturning of a loose stone; so, inspect, if you hear a noise of this significance. This is a rare accident and almost impossible if a mailing-case or some similar device is applied over the glass. Pet-cock gauges are more reliable than those indicating through long stems on floats, but they should be cleaned occasionally, and the oil level must be sighted against a good light after the glass becomes stained. If the gauge apparently indicates an impossible economy in oil consumed, investigate, as there may be a stoppage somewhere.

Greasings and oilings should be standardized at 50, 100, 200, 500, 1000, and 5000 miles, as indicated by the cyclometer for total mileage. A few miles make no difference, but keep close to the even numbers. Grease can be carried in an ordinary ointment jar. Learn what lubrications are necessary and what do not affect the running and wear of parts. Some cars require only engine oil and grease for all other lubrications.

Water or, in cold weather, wood-alcohol of 10 to 30 percent, should be supplied to the radiator at least every hundred miles, oftener for very hot weather or much driving on low gear. Use soft, clean water, straining it if it is obtained from a pump. Watch the rubber connections for leaks, especially if your car leaves a little puddle when it stands, although in cold weather condensed vapor from highly volatile alcohol mixtures will usually deposit a little water or ice beneath the radiator. Boiling occurs inevitably with some cars in hill climbing on low speed, but it may also result from a broken fan-belt, which latter should be inspected occasionally. In cold weather, use a hood-cover, but keep it open in front when running, unless for very short distances. Boiling often indicates too little or too dirty and thick engine oil.

Keep the water level in the radiator a little low in cold weather; know how much of it your radiation system holds altogether; start with a 10 percent wood-alcohol mixture, which will prevent freezing, down to 18° F., and in case of further descent of temperature add pure wood-alcohol to strengthen the mixture, as calculated algebraically, so as to withstand any degree of cold. Every increase of 5 percent in the wood-alcohol percentage reduces the freezing point about 10° F. Of course, the alcohol must be added before freezing occurs and just before the engine is to run again, so as to secure diffusion. A 30 percent wood-alcohol will protect down to —5° F. Glycerin, about a quart for a radiator, prevents, to a large degree, the volatilization of alcohols at higher rate than water. It is expensive, and, by using a 1 : 9 solution of wood-alcohol and counting it as 10 percent, the excess volatilization is approximately balanced. Wood alcohol has a slightly greater protective action against freezing than denatured ethyl-alcohol, while costing the same. In the spring, simply add water to the wood-alcohol mixture in the radiator until all danger of freezing is past, then drain and wash out the radiator. As water costs nothing, repeat the process every month or so during the summer.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois
Author of "Everyday Diseases of Children"

[Continued from page 144, February issue]

AS HAS already been stated, to cure chronic cystitis may or may not be a simple matter, everything depending upon the causative condition. It is remarkable how quickly a hitherto rebellious cystitis will disappear when a stricture is dilated, a calculus removed or a gonorrhreal infection controlled.

Not at all infrequently prostatic hypertrophy is the *causa causans* and massage of the gland, the use of the psychrophore and high-frequency (rarely the galvanic) current, together with a course of chromium sulphate internally, will prove promptly curative. Unfortunately, however, the annoying cystitis accompanying true senile prostatitis is controlled with extreme difficulty, if at all. The hypertrophied prostate causes retention and, as a result of the degenerative change, which has occurred, it is impossible to effect reduction of the enlarged gland.

I have, however, succeeded in giving very great relief to patients so afflicted by emptying the bladder and irrigating with a warm boric-acid solution, consisting of 1 dram of the acid to 10 ounces of water. This fluid should be withdrawn and 1 dram of a solution of thymol iodide in a purified cotton-seed oil base injected and allowed to remain until voided at the next urination. If the urine is very foul and ammoniacal, 5 to 10 grains of boric acid should be given three times a day for one week and then be replaced by arbutin, grs. 2; hexamethylenamine, grs. 5; eupurpuroid, gr. 1-3. In all these cases *he bacillus-coli* or the Van Cott combined bacterin may be administered with advantage.

Under such medication three or four irrigations usually produce a very marked improvement; indeed, patients quite often state thereafter that they experience little or no distress beyond difficult and frequent micturition. Naturally, some cases prove more rebellious than others and now and then we are compelled to advise operation or regretfully consent to the induction of catheter life.

It is well, perhaps, in passing, to impress again upon the physician the absolute necessity of an aseptic technic. It will not do to insert a sterile soft-rubber catheter and then place the irrigating solution in a half-cleaned

syringe. Further, every precaution will be nullified if the hands of the operator, meatus, and urethra of the patient are unclean.

I have seen catheters dipped in carbolized oil, held under the hot-water tap for a few moments, finally lubricated with glycerin, and passed (with considerable difficulty and manipulation) through an uncleansed urethra. Quite naturally, doctor and patient agreed that washing out the bladder "didn't do much good." After using, rubber catheters should be cleansed in a lysol solution, the fluid being forced through the lumen with a hard-rubber syringe, then rinsed in boiled water and kept in a 1 to 2000 chinosol solution. Before insertion, the tip may be lubricated with borated petrolatum. Metal or glass recurrent catheters can be boiled or sterilized by dry heat.

Before any instrument is introduced the patient should urinate and wash the glans and prepuce thoroughly with warm water and soap. The physician then irrigates the urethra with any mild antiseptic and covers the penis with two thicknesses of sterile gauze. A small opening is made over the meatus and through this the catheter (also held in gauze) is introduced carefully. When the long-nozzled, hard-rubber syringe is used to instill the thymol-iodide mixture, equal pains should be taken to maintain asepsis.

Methods of Irrigating the Bladder

There are several ways of irrigating the bladder: At the office, the Janet method may be employed, but for patients treated at home (as many of them must be) the physician will depend upon the catheter and fountain or piston syringe. Wherever urethritis and cystitis coexist, the Janet method should be employed, if possible; also, where there is a pronounced stricture (which should be divulsed or incised) or where the passage of the catheter causes hemorrhage. A blunt tip, shield, and cut-off can be easily carried and kept surgically clean, and enameled metal reservoirs are cheap and readily obtainable.

The regular fountain syringe may, of course, be used with a proper tip and shield, but on no account should the "household outfit" be employed. A 6-ounce, glass-barrelled syringe serves excellently for ordinary bladder washing. When filled, the nozzle is inserted into the orifice of a 12- or 14-gauge French

catheter already passed, and the fluid is expelled into the bladder in jets—say one ounce at a time. The bladder must not be overdistended and care should be taken to introduce the solution without undue force. In certain cases, irrigation can be more satisfactorily performed by means of a fountain syringe with cut-off and tapering tip.

Local Antiseptics in General Use

Naturally, different conditions demand different remedies and a host of agents have been used locally in the various forms of cystitis. Boric acid is cleansing, soothing, and non-toxic; chinosol, from 1 to 1000 to 1 to 2000, is decidedly bactericidal; formalin, 1 to 5000, may be employed with advantage where there is much pus in the bladder; permanganate of potash, 1 to 3000, is useful if a urethritis is present; bichloride of mercury is effective, but must be used with extreme caution.

This last-named drug is particularly undesirable where erosions or breaks of the vesical mucosa exist or where it is practically impossible to withdraw *all* the fluid injected. It has been stated that absorption does not take place from the bladder, but knowledge of more than one case of bichloride poisoning following irrigation with 1 to 2000 mercury solution leads this writer to hold a different opinion.

Some of the Silver Preparations—and Others

Probably the three most useful drugs are boric acid, ichthiol, and silver nitrate, but argyrol may in some cases replace the latter. Silver nitrate may be used in the proportion of 1 to 1000 to 1 to 5000. It is usually advisable to commence with the weaker solution and increase carefully. If irritation is apparent the bladder should be washed out immediately with physiologic salt-solution. The best results follow semi-weekly irrigations, although, if the bladder is tolerant, every other day is not too often.

Argyrol and protargol are rarely used save for small injections of one or two drams—the first in 5 to 20 percent and the latter in 1 to 5 percent solution. Not a few G. U. men first wash out the bladder with silver-nitrate solution and then inject the smaller quantity of argyrol or protargol solution. Oily preparations should not be used after any of the silver salts. I am not prepared

to explain why a reaction occurs, but it almost invariably does, and the patient will complain of intense pain for several hours.

In retention-cystitis of old or middle-aged men, with more or less hematuria and intense burning or spasm after micturition, nothing affords greater relief than irrigation with calendula and hamamelis. First, of course, the viscus should be thoroughly cleansed with boric-acid solution and any alkalinity of the urine corrected by appropriate internal medication. After three ordinary irrigations, and a week's use of arbutin and hexamethylenamine, inject every second day 4 ounces of the following solution: Aq. ext. hamamelis, oz. 1-2; aq. ext. calendula officinalis, oz. 1-2; aqua dest.. q. s. ad ozs. 4. Even better results follow substitution of calenduline (Lowry), which contains in addition to calendula a soluble bismuth salt and a very small quantity of resorcinol. It is used in the same proportions.

Under such medication, even small but extremely troublesome ulcers have healed within a month.

In Irritable or Tuberculous Bladders

In extremely irritable or tuberculous bladders gomenol oil is used in 10 to 50 percent solutions. It is decidedly to be preferred to the old iodoform emulsion, but in my opinion inferior to euarol, i. e., thymol iodide in oil.

None of these measures will prove curative or even materially beneficial, however, unless gross lesions are recognized and corrected. For instance, a urethra so contracted at any point that it will not permit the passage of a 28 or 30 French-gauge catheter calls for the use of sounds or dilator. Should these fail, external or internal urethrotomy will be necessary. Again, even daily irrigation will fail to relieve (even if it does not aggravate) the cystitis accompanying the more pronounced form of prostatic hypertrophy. It is safe to say that when the projecting gland causes the constant retention of one or two ounces of urine, enucleation is essential provided always that the physical condition of the patient is sufficiently good to warrant subjecting him to the unavoidable shock of such an operation. Vesical calculi and tumors should also be removed as soon as possible. Later, the concomitant cystitis can be treated effectively.



What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

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EDITORIAL NOTE.—This is the second paper in the series of articles upon chronic diseases which Doctor Butler is contributing to "Clinical Medicine." The first paper appeared in January. On account of the Doctor's temporary illness, we were compelled to omit the second installment from the February issue. Hereafter we hope to be able to present a paper upon this topic from Doctor Butler's pen, every month, for some time to come.

[Continued from page 44, January issue]

Focal Infections

THIE relation of focal infections to chronic diseases and the means of detecting them are important.

It is now generally believed that the majority of chronic diseases begin in some infective focus. We know that syphilis, tuberculosis, and many others begin locally; and besides these there are many that very probably begin locally, although this has not as yet been fully demonstrated. However, we must search for an infective focus and, if found, remove the same if possible. It is fairly well proven that endocarditis, myocarditis, pericarditis, and chronic arthritis arise from some focus; and these foci may be about the teeth, tonsils, accessory nasal cavities, prostate gland, genitourinary tract, gall-bladder, and intestine.

In the prognosis of these cases, however, we must remember that a supposedly causative focus found and eliminated may not result in recovery, for there may be other unknown causes or the focus found may not be the one at fault.

Cholecystitis, nephritis, "neuralgia," neuritis, and certain of the anemias may depend for their existence upon obscure foci of infection. No case obscure in origin should be passed over without diligent search for some focus of infection.

Among the innumerable bacteria responsible for many of the chronic diseases, the streptococcus-pneumococcus group predominates. This does not deny any causative relationship to other organisms, but indicates a strong predilection on the part of this particular group to produce focal infections and to resist destruction. The recent discovery by Smith and Barrett of an endameba in alveolar pyorrhea—and confirmed by other writers—shows that other organisms may be causative factors. In an exhaustive paper on the elective localization of streptococci, published by Rosenow in *The Journal of the American Medical Association* for No-

vember 13, 1915, the author, in closing, says:

"The results detailed in this and previous papers seem to bring necessary experimental proof that chronic foci of infection play a most important role in causing systemic disease, a fact which has been observed and frequently commented upon by different observers, but has been recognized in its full clinical significance especially by Billings. A focus, such as a pocket in the tonsil, which cannot heal for mechanical reasons and which is constantly filled with pus and necrotic material teeming with bacteria, must be regarded in the light of these findings as a culture-tube with a permeable wall, affording abundant opportunity for the entrance of bacteria and their products."

"The proceedings necessary to discover foci of infection are sometimes simple, often complex, and the search is sometimes exceedingly difficult and trying principally because of the known lack of negative evidence," writes Dr. S. Marx White, in an article on the relation of focal infection to systemic disease, appearing in *The Journal-Lancet* for June, 1915. I quote still further from Doctor White, as follows:

"Foci of infection can be so surrounded by normal tissue or so deeply hidden and symptomless that only a profound conviction as to the existence of some focus, coupled with a most painstaking search, will reveal them. The task is not one which any one individual can perform, as a rule. Trained men in each particular field must take part, but best of men will sometimes fail to uncover a lesion in his particular field, and the case may need repeated study."

I have had more than once to demand repeated examination, in the face of a negative report, when some slight localizing indication gave me a clue. I recall vividly one patient whom I had caused to be examined by some of our best rhinologists four times before a closed focus containing a dram of foul pus was found in the ethmoid cells. The nasal

cavity was of normal appearance, so far as careful inspection revealed, and it was necessary to open the region by probing. This was before the days of successful and routine x-ray examination of the cranial sinuses, and failure does not, or should not, occur so readily nowadays.

The Tonsils as Factors in Chronic Disease

I think particular caution is necessary regarding the tonsils. This is not the place to discuss the indications for tonsillectomy, but I have not infrequently felt called upon to insist upon this operation when properly conservative colleagues, specialists in that field, have thought the tonsils themselves did not present sufficient evidence of existing disease.

I believe that we as often will find systemic infection resulting from tonsils which are small, adherent to the pillars and more or less buried out of sight, as we do from the frankly and evidently inflamed ones. In such cases, and where no other foci are to be found, the decision to perform tonsillectomy rests more upon whether there is evidence from some local focus than upon the apparent condition of the tonsil itself. This attitude has frequently brought a reward, the pathologist finding evidence of active infection or the operator finding a small deep abscess in cases where the tonsil, on clinical examination, gave no sign of active inflammation.

The recent activity in looking for and finding abscesses in the jaws affords a new illustration of the method of advance in knowledge by the development of a new technique. Without the radiogram, using small gelatin films, which can be placed in the mouth and thus recording the condition of the teeth and maxilla, a search for infection would be laborious and incomplete. Even with the x-ray plate great care and experience is necessary for interpretation; and this must be combined with a careful clinical study by the dentist, or else serious errors may arise.

The method of management in most cases of dental infection combined with systemic disease must be determined by the physician and the dentist in cooperation. The efforts always must be to preserve the teeth when certainty of eradicating the infection is not sacrificed thereby.

Success in the discovery and management of focal infections anywhere in the body is founded on cooperation. The internist, the roentgenologist (as contrasted with the radiographer), the rhinolaryngologist, the dentist, the genitourinary surgeon or the

general surgeon and the immunologist may be called, one to help the other. It is to be hoped that they would not all be needed in any one case!

Gastrointestinal Infections

One of the most common sources of infection is the gastrointestinal tract. A healthy condition of the bowels, with free elimination, is of the utmost importance in the treatment of all chronic diseases. In his "Manual of Physiology," Stewart writes: "In a body which is neither increasing nor diminishing in weight, the output must exactly balance the income, and all that enters the body must sooner or later, in however changed a form, escape from it again. In the expired air, the urine, the secretions of the skin and the feces, by far the greater part of the waste products is eliminated. Thus, the carbon of the absorbed solids of the food is chiefly given off as carbonic acid by the lungs; the hydrogen, as water, by the kidneys, lungs, and skin, along with the unchanged water of the food; the nitrogen, as urea, by the kidneys. The feces represent chiefly unabsorbed portions of the food. A small and variable contribution is that of the expectorated matter and the secretions of the nasal mucous membrane and lacrimal glands. Still smaller and still more variable is the loss in the form of dead epidermic scales, hairs, and nails. The discharges from the generative organs are to be considered as secretions, with reference to the parent organism, and so is the milk and even the fetus itself, with respect to the mother."

For many years, we have understood the grave importance of malnutrition; but, with the still more serious subject of faulty elimination and excretion we have not been so well acquainted. If the various excretory organs do not carry out their functions properly, life is destroyed much more rapidly than when food is being withheld; and the continuous imperfect elimination is a momentous issue.

The superior importance of the functions of *egestion* over those of *ingestion* was pointed out by Marshall Hall in 1842. When the system fails to rid itself of its own carbonic acid, it is soon poisoned. The excreta eliminated through the urine are powerful nerve poisons, the retention of which gives rise to coma and convulsions; while bile retained in large proportion is equally injurious. In fact, it seems that the assimilation of all foods is attended or followed by

the production of principles of an extraordinarily destructive character, either as injurious products of the food when split up within the digestive tract or as waste matter, the result of hystolysis.

The problems concerned with retrograde metamorphosis are very important, especially those connected with the nitrogenized substances, the components of which do not merely go toward tissue building and then, through a process of oxidation, change from one form of hystolytic product to another; for, they do not break up, in the tissue destruction, into creatin, creatinin, tyrosin or other early-stage products of tissue decay, then change into urea and uric acid, merely. In all these forms, they are, when in large amounts in the system, dangerous poisons; and they also become fermenters within the organism, the deleterious functions of which must be taken into consideration by the physician.

Acidemia

Acidemia is a condition found in many chronic diseases, and it finds expression in various ways, all indicative of imperfect digestive processes, faulty metabolism, and incomplete elimination. This condition is caused primarily, in many instances, by hepatic insufficiency, intestinal stasis, and toxemia. According to Harrower, who, in an article on acidemia and auto intoxication, has lucidly described this condition, the first evidence of acidemia is usually a feeling of dulness or laziness, with an occasional headache. The individual complains probably of "not feeling well." He is, of course, not yet sufficiently inconvenienced to consult a physician, and, so, the condition is allowed gradually to become worse. The bowels are always quite irregular in action, at times moving too freely and again being moderately constipated. Later, the breath becomes foul, the tongue, coated, the stools, bad-smelling, often having an offensive, putrid odor, and in many patients dark rings form under the eyes.

The effect upon the temper is often marked, and persons previously kind, affable, and agreeable become morose and show "streaks" of ill-temper and rudeness. The mind is not as clear as before, and the afflicted individual often finds it hard to recall names or dates that were formerly quite familiar. Occasional pains are felt in various parts of the body, usually varying quite a good deal in severity and persistence. These may be ascribed to "a touch of rheumatism" or to

"just a little cold," and are naturally treated in a haphazard manner, but with little or no lasting results.

Things go on from bad to worse until some neuralgia, arthralgia or other acutely painful condition causes the sufferer to demand the physician's attention. Even should the patient be fortunate enough to be subjected to a thorough physical examination, no serious conditions will be brought to light, unless some other disease-process is also present. He receives, as a rule, a more or less brisk cathartic, but otherwise is reassured by the usual "You'll be all right in a day or two."

It, however, the urine should be examined, several important departures from the normal will be discovered. The amount is usually diminished, the total acidity is found to be very high and the total solids low. The acidity shows an increase above the normal of 35 to 40 or even 100 percent. The test for indican rarely fails to establish its presence.

The routine cathartic course given serves, of course, to remove from the bowels large amounts of stagnant, putrefying material, and, at least temporarily, the patient is made to feel "better." However, if the cause of the trouble is allowed to persist, the previous conditions soon return and the patient grows steadily worse. The stomach gets out of order, the appetite fails, and the mouth condition often becomes serious. Teeth decay rapidly, not from lack of care, but from the acid saliva that is invariably present. Neurasthenia, mental irritability, the "blues," insomnia, neuritis, neuralgia, dyspepsia, and a large number of other disease-manifestations are often encountered, and the patient is liable to become sooner or later a nervous wreck. In this condition, he goes from one physician's office to another, without obtaining any permanent benefit. At times, he feels a little better, then, again, he is much worse, until at last he falls an easy victim to some serious disease, such as pneumonia, typhoid fever or tuberculosis.

Importance of the Urine Examination

From the foregoing, it is evident that it is advisable in all cases to make a urinary analysis. Leube has well said: "I would advise particularly never to omit the examination of the urine in cases of headache, even if it is of purely intermittent character. We shall thus avoid subsequent self-reproaches."

The laboratory report will give definite grounds for initial rational treatment, while the subsequent urinary examinations will show the effects of the treatment. The saliva, too,

should be tested with blue litmus-paper—a very easy procedure of considerable value, which should be carried out much more frequently in the routine of office or bedside consultations. The administration of laxative salines, suitable hepatic stimulants, and antacid remedies for an extended time—to be governed by the influence upon the urinary and salivary acidity—will in time regulate matters more satisfactorily.

Intestinal antiseptics, such as beta-naphthol, the sulphocarbolates, and other similar substances, are of great assistance in reducing bowel putrefaction. The proteid rations should be materially reduced, especially the more easily putrefying meats.

Most authorities deny that acidemia and autointoxication are diseases in themselves; and this is doubtless true. Both conditions are a serious menace to the individual, in that they lower the general vital resistance, rendering the subject more susceptible to every kind of disease, infectious or otherwise. The danger from these conditions is in direct proportion to their insidious onset. They should always be thought of when patients come complaining of obscure ailments; while they are easily detected if only the physician will give the proper weight to the laboratory findings and makes it a routine practice either to examine the secretions for himself or else have it done for him by some competent laboratory-expert.

Digestive Principles

Pepsin, an unorganized ferment excreted by the follicles of the stomach, is a powerful digestant of all proteid substances. Pancreatin, another albumin-digesting ferment, is formed by the pancreas and possesses notable digestive powers. Ptyalin, useful for converting starch into sugar, is a ferment present in saliva. These valuable ferments are excretions, in that they are cast out of a part of the organism, while at the same time they promote digestion by their action on the food-material. An animal-principle closely resembling albumin is contained in all the gastric, pancreatic and salivary fluids; a principle which appears to be in a constant state of change or incipient decomposition; and this very condition, if it be thus, makes the albuminous matter important in promoting solution of aliments, but at the same time renders it unfit for retention in the circulation.

Our body-heat has its source in the lactic acid of the lactate of sodium. This is derived from glycogen stored up in our livers, where

it is converted into sugar, thereafter to be broken up into the lactic acid mentioned; which then, uniting with the sodium of the blood, becomes slowly oxidized. The production of too much waste matter by the overactivity of these fermenters is a phenomenon just beginning to attract the serious attention of clinicians, and there is every reason to believe that much good may come from a study of this problem.

Down along the gastrointestinal canal various excrementitious activities take place which result in numerous recrementitious albuminous products, and these are very helpful to food elaboration. Primarily divergent from each other, in themselves they possess considerable action in common. In other words, the primitive tegument along the digestive tract has gone through such changes that it now excretes, or secretes, various products which assist the process of assimilation while it gives out other products which, when the system is charged with them, are too far advanced to have any nutritive force, being, in fact, active poisons.

As is well known, the intestine, in addition to its other functions, eliminates a number of substances from the body-fluids, notably iron, phosphorus, calcium, and others, in the form of organic salts. It also secretes, in less measure, nitrogen and fatty, or fat-like substances.

The doctrine of intestinal autointoxication was promulgated by Bouchard and elaborated by his followers. It is a familiar fact that the intestine is the sole internal organ in which, from the day after birth onward, bacterial decomposition occurs continuously without necessarily injuring the body. Indeed, bacterial action is believed by many to be necessary for the correct functioning of the intestine. The chemical processes in the decomposition of the chyme consist in fermentation of the carbohydrates, putrefaction of the protein, and conversion of the fats into the lower fatty acids. Of all these, the last mentioned is of least importance.

It is in the colon and in the lower part of the small intestine that, normally, *fermentation of carbohydrates occurs*. On the other hand, *putrefaction of protein* takes place only in the large intestine. A rigid line of demarcation is formed by the ileocecal valve, above which putrefaction never sets in, except under pathologic conditions. In the cecum and ascending colon, the two seats of most active decomposition, both putrefaction and fermentation come together; the latter afterward predominates over the former to de-

crease again in the last portion of the colon, where the feces become inspissated. It follows that the fecal bacteria, which flourish abundantly in the cecum gradually decrease in numbers further down.

The products of fermentation are: gases, volatile fatty acids and lactic acid; and, for the most part, these are absorbed by the intestinal wall. The gases become again excreted with the air expired by the lungs, in breathing. The fatty acids are either expired or eliminated unchanged in the urine or become oxidized. Those products of

fermentation that do not become absorbed are excreted, either as flatus or along with the feces. Putrefaction of protein produces ammonia, sulphureted hydrogen, and other gases; as well as several characteristic bodies such as aromatic oxy-acids, phenol, indol, skatol. These latter also are absorbed by the intestinal wall, while the gases are expired. The other substances either remain, to a variable extent, in the feces or are excreted in the urine as compounds of sulphuric or glycuro-nic acid.

[To be continued.]

Bacillus-Coli Cystitis, and Its Successful Treatment

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THE colon group of microorganisms is responsible for ninety percent of all cases of cystitis. In children, the percentage is even greater than this.

The disease manifests itself in various degrees of severity, the mildest form being practically nothing more than a bacteriuria. In such cases, there is frequent urination, and the urine shows a granular cloudiness, is acid in reaction, and contains very few cells, but a large amount of mucus. Albumin may be absent, or if present there is a slight trace only. Such cases are very frequent. They may last a week or several months and terminate in spontaneous cure or gradually become more and more severe—at least severe enough for the patient to consult a physician.

Variations of Type

From this mild type, there are all gradations up to the most severe form, in which there is frequent, painful urination, tenesmus, slight fever, many pus cells, usually a few red blood corpuscles, and albumin in the urine. The urine is of acid reaction, although at times this acidity may be very slight. These severe cases usually show an extension of the disease to other portions of the urinary tract—that is, an ascending infection, the ureters and finally the pelvis or the kidney itself becoming infected. Not infrequently one sees cases of the severe type of cystitis beginning as a renal infection. The symptoms are the same whether the disease originates as a cystitis and there is an ascend-

ing infection, or whether infection begins primarily in the kidney itself. As already stated, there are irregularly occurring colicky pains and renal tenderness, while albumin, red blood-corpuscles and pus are found in the urine. There is an accompanying fever of an irregular, intermittent type, resembling very much that of malaria. These cases may develop a septicemia due to the colon bacillus.

Conditions That Predispose to Colon Cystitis

There is always a predisposing pathologic condition, general or local. More often this is local, that is, located in the urinary tract. Upon investigation we find a history of urinary retention, urethral stricture, enlarged prostate, chronic endometritis. Less frequently there is some insidious systemic disease.

This form of cystitis is very common in women and in practically all cases there can be obtained a definite history of severe chronic constipation. As a matter of fact, the real cause of the infection is believed by many to be found in the natural tendency of the kidneys to separate living bacteria from the blood stream and excrete them by the urine, normally without harm to urinary tract. We know definitely that this occurs, because, in various infections in which bacteria are present in the blood, the bacteria are found in the urine: typhoid bacilli in typhoid-fever; pneumococci in pneumonia; streptococci in rheumatism; and so on. Further, it is believed by some that colon bacilli are constantly passing the intestinal

mucosa, gaining entrance to the blood stream from which they are eliminated by the kidneys, and, as many observers claim, without a demonstrable intestinal lesion. The disease may also result from extension (more frequently, I believe, in women) from a peritonitis or peritoneal inflammation. It was formerly thought that appendicitis and peritonitis were essentially colon-bacillus infections, but that mistaken opinion is now known to have been due to faulty methods of culturing, the colon bacilli overgrowing the streptococci, which are the essential organism in these infections; rarely is the concomitant causative organism a staphylococcus or a pneumococcus.

The Distinctive Features of the Colon Bacillus

The colon bacillus appears in the urine usually as a diplobacillus. These organisms are found partly in long threads, but usually are short, like cocci, and in a freshly voided urine are not very motile. The urine is practically always acid, but the simple fact that the urine is acid does not justify one in assuming that the cystitis is due to the bacillus coli; other organisms may be found and it is always essential to make at least a microscopic examination preferably using Gram's stain.

The patient's serum usually will agglutinate the organism in a dilution of 1 to 20 or 1 to 50. In fact, natural agglutinins for bacillus coli are commonly present in normal sera; frequently, however, in slight cases, the patient's serum will not agglutinate the organism in a dilution of 1 to 50.

Bacterin Treatment of Chronic Cases

The chronic type of the disease is practically always markedly benefited by bacterins, although occasionally there occurs a case in which one or two injections will rapidly reduce the temperature to normal, all local symptoms disappearing at the same time. However, in my experience, a complete clearing-up of the bacteriuria is impossible by means of bacterins alone, and a few pus corpuscles will be left in the urine.

Nevertheless, in these chronic cases, the bacterin alone produces very marked benefit. I have yet to see a case that, so far as the patient's subjective symptoms were concerned, was not cured clinically.

Relapses are not common. Seven cases of the chronic type in women (one of five years standing), with frequently-occurring exacerbations, especially during the winter months, have now been completely free, symptomati-

cally, from this disease, two years after a course of bacterin treatment, although in two of them a few pus corpuscles, with an irregularly occurring bacteriuria, without clinical symptoms, still persist.

Results Obtained in Acute Cases

In acute cases, the results are usually not so striking with bacterin treatment alone. These cases always require the use of some urinary antiseptic, preferably hexamethylenamine, combined with acid sodium phosphate to increase urinary acidity, and careful attention to the general and especially to the gastrointestinal condition. However, if ten or twelve doses of the proper bacterin be given (by this I mean comparatively large doses at four-day intervals), and the desired result is not obtained, then we know the predisposing cause, that is the local or general pathologic condition as a result of which cystitis has occurred, has not been removed, be this a general, genitourinary or gastrointestinal condition. It is essential in these cases to determine the presence or absence of some surgical condition, such as polypi, strictures, and the like.

Two Interesting Cases

During the last year, two exceedingly interesting cases of colon-bacillus infection of the bladder have come to my hands:

The first patient was a man, forty-six years of age, operated on in February, suprapubic incision being made for the removal of a vesical calculus. Recovery was uneventful, except for a slight fistula. This fistula, however, persisted in spite of the ordinary treatment for some three months, at which time he was referred to me. Examination revealed a small fistulous opening at about the median point of the incision, from which was passed a few drops of urine, practically only during the time of urination, and rarely more than a half dram at a time. The urine was acid in reaction, contained considerable pus, much mucus, many colon bacilli, very few red blood corpuscles, a slight trace of albumin, a large amount of indican, and no casts.

An autogenous bacterin was prepared from the patient's urine, and administered at four-day intervals, 100,000,000 dead organisms at the first dose, increased 100,000,000 at each successive dose. He was likewise given hexamethylenamine and acid sodium phosphate, 10 grains of each three times a day, and bacillus-bulgaricus bouillon. The fistula closed rapidly, and at

the end of three weeks there was no apparent evidence of the fistulous opening except a very slight reddening of the scar. Some six weeks later, however, there reappeared a small superficial abscess at the site of the fistula. It had no connection, however, with the bladder, and two additional doses of bacterins, 400,000,000 bacteria in each, produced its disappearance.

The second patient was a physician, age 64. He had suffered from a hypertrophied prostate with occasional retention requiring catheterization; constant bacteriuria, finally complete retention. A suprapubic prostatectomy was performed, and for three weeks, following operation, in spite of the usual antiseptic treatment, a violent cystitis was present. This patient was given an autogenous bacterin, 25,000,000 microorganisms, daily for six doses, then 300,000,000 every four days for five doses, at which time the fistula closed. This patient, in order, as he himself stated, "to make doubly sure of a cure," took himself approximately 2,000,000,000 colon bacilli. This produced severe prostration, lasting for some ten or twelve hours; in fact, it was so severe that he was unable to stand, but the following day, as he expressed it, there was no evidence of toxemia or depression. This was the only reaction to the bacterin that he manifested, the previous doses producing only a very slight discomfort.

Chronic Cystitis in a Woman

Another interesting case was that of Mrs. S., age 39, who suffered from acute exacerbations of a chronic cystitis and bacteriuria, following slight acute exacerbations of a chronic appendicitis for three years. At no time, until the last attack, did the cystitis persist for more than five days. The patient suffers from chronic constipation and when this becomes particularly marked, she says she has a "bilious attack," in which

there is inhibition of digestion, fermentation of gastric contents, with severe headache, followed by an attack of vomiting, later some diarrhea, and then evidence of cystitis. Usually at the time she complains of diarrhea there is slight pain in the region of the appendix. She refused operation.

A thorough course of catharsis, followed by an autogenous bacterin and bacillus-bulgari-cus buttermilk, as a sole diet, in twelve days cleared up the condition completely—at least symptomatically. The return to a normal diet, however, resulted in a marked rise of temperature (102.8° F), tenderness in the region of the appendix and six hours later, tenesmus and frequent urination, with but a slight increase in the number of pus corpuscles in the urine.

A return to the buttermilk diet and four additional doses of bacterin, followed by a gradual return to normal diet, in one month has produced a clinical cure, without relapse, although there is still an intermittent bacteriuria.

An examination of this patient's urine, from which the bacterin was made, showed a large number of pus corpuscles, and many colon bacilli, mostly small diplococcus-like forms that proved to be bacillus coli communior. An examination of the urine immediately following the relapse showed very few corpuscles and many clumps of bacilli, swollen and agglutinated, giving an appearance such as one sees under the microscope in a positive Widal reaction. These clumps of bacilli could be seen with the naked eye, and they did not tend to break up, although the urine was observed for forty-eight hours at room temperature. This patient's serum now, some nine months after bacterin treatment, agglutinates this particular strain of bacillus coli communior in a dilution of 1 : 1200.

[*To be continued*]

WHOEVER could make two ears of corn or two blades of grass to grow upon a spot where only one grew before, would deserve better of mankind than the whole race of politicians put together.—Jonathan Swift.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

III. RAILWAY SURGERY

IN VIEW of the large number of accidents occurring on railways, both to employees and passengers, the position of the surgeon to the railway-corporation becomes one of great importance, and, in proportion, the means devised for the ready care of this class of injuries have, of late years, necessarily improved. The great advances in surgery have been utilized to the utmost advantage in the treatment of railway emergency-cases, and methods in vogue but a short time ago are being improved and practicalized year after year, until today, through organization and first-aid lectures to employees, the United States has a system of railway surgery that it may well be proud of, as evidenced by that very practical proof—decreased mortality.

The Past and the Present

From the beginning, in earlier days, it has been realized that the treatment of these cases has been hampered by lack of facilities, wrecks apparently choosing to occur always at a point situated the farthest away from any possible aid of a professional nature and thus necessitating long delays before the surgeon could be conveyed to the victims. Then, when the surgeon had arrived, there would be little or nothing to work with, his dressing-materials being limited to a few bandages, a small quantity of gauze, and such instruments as had been hastily snatched up on leaving the office.

The organization of the road was not then what it is now; the equipment was vastly inferior, there was no track elevation, the road-bed was poor, which, with curves and reverse curves, made wrecks more frequent, while the class of trainmen then existing were not as well trained and skilful as they are at the present day. Moreover, the country was not as thickly settled as now and stations were farther apart, making difficult the problem of securing immediate first aid, one of the fortunate uninjured oftentimes being the only means of sending out for help, and then frequently only by the tedious process of a long walk back to the nearest station.

However, "necessity is the mother of invention," and it did not take the officials long to realize that this problem must be

solved, and, applying their active brain-power to its solution, we have now a splendid system in the hands of a trained and well-equipped force, which is carrying out the details of the work in such a manner as materially to reduce the mortality of railway casualties by an appreciable amount.

Fewer Casualties Among Employees—More Among Trespassers

It is gratifying to find that the percentage of deaths and injuries among those employed on the road has been reduced by something over 50 percent, the greater number of accidents happening to a particular class of which more will be written later. Although the number of casualties among the employees has been decreased, the total number of accidents for the year has actually been increased; which statement sounds mystifying, until it is explained that by far the greater number of unfortunates are to be found among a class of careless, unthinking people known as trespassers, whose existence is the bane of the careful railwayman, who already has enough to attend to in the discharge of his official duties to his road and, yet, is called upon to watch the track constantly for men, women, and children who make it a public highway or even a playground.

Much money, the combined planning of master minds in railroad affairs, as well as countless devices for warning the general public against trespassing, has been wasted in an almost fruitless attempt to keep people off the right of way; but, until legislative measures are passed, providing for fines and penalties for this class of offenders, the hoped-for results can never be attained. Even where such laws have been made, they are seldom enforced; so, year after year, the evil continues. The only encouraging fact to be mentioned is, that at least a start has been made to abolish this trouble, which should, by all means, be wiped out.

A glance at the statistics of railway accidents may prove interesting as well as instructive, and so will be inserted here: In the year 1914, out of 265 passengers killed, only 85 were killed in train wrecks; leaving a remaining 180 who lost their lives falling from trains in yards, getting on or off cars

in motion and being struck by passing trains. Among employees, it has been found that only one man out of every 172 was killed—certainly an enlightening statement and showing the care which is being exercised by officials. As significant as are these facts, the deduction can be made still more plain. During the same period of time, 5471 persons were killed and 6354 were injured while trespassing on the right of way. Think of it, 32 men, women, and children killed or injured *every day* while they were trespassing on property which is fenced off, placarded by day and danger-lighted by night, watched and guarded by every conceivable plan just for the purpose of preventing this very danger.

Yes, you are right, the preponderance of the blame lies with the public; and here is where you and I, humble private practitioners though we be, can do much good by warning our patients and our patients' children of the danger incurred by trespassing on railway property; nay, more, by setting them a good example.

First Aid to the Wreck Victims

The plans adopted by different roads differ somewhat, and it might not be amiss to explain briefly what these differences are, though the results are all productive of the same excellent effect in decreasing mortality and likewise, by competitive stimulation, in increasing efficiency.

The formation of a surgical staff for a railway system should start with the appointment of a chief surgeon, whose duties not only would be professional, but executive as well. He has the complete supervision of the surgical work of the entire road and is in authority over the division surgeons, who are stationed at each division point, having charge of from 200 to 400 miles of territory each. These division surgeons are appointed by the chief surgeon from men of proven ability in their community and are usually recompensed in such a manner as to enable them to devote their entire time to the work in hand, only seeing private patients in their offices and not making any outside calls. Many roads require physical examination of their employees, also a record of time off for sickness, as well as accident; and the discharge of all these duties will usually occupy the surgeon's entire time.

When the particular division is in a thinly settled section of country, it is customary for the division surgeon to go to the scene of the accident and bring the injured person or persons to the nearest point where proper

care and attention can be given. Should the division be in a well-settled part of the country, it is often possible to have some local surgeon (with whom such an arrangement has been previously made) care for the case until the division surgeon arrives, whereupon the patient is immediately placed under the latter's care.

The nearness of a properly equipped hospital will often affect the above arrangement, and the general subject of railway-hospitals will be discussed later in the paper; the various roads differing somewhat in their views on this subject.

Taking Care of Wreck Victims

When a wreck occurs—and it would seem that it usually happens at some point midway between stations—the nearest division surgeon is called out and hurried to the scene on the relief-train; which latter consists of the giant wrecking crane, block cars, one or two sleepers or day-coaches, a full line of surgical supplies, besides such additional surgeons as the division surgeon may deem necessary to call upon, according to the circumstances.

Immediately upon arriving, a headquarters for the accommodation of the injured persons is selected, and this may be a nearby house or shed, an empty coach (sleeper preferred, though a day-coach may be made to do by turning back alternate seat-backs and placing the cushions longitudinally), or, finally, if none of these are available, the floor of a boxcar on which hay or straw covered with blankets has been laid.

The helping surgeons are paired off as first-aid men and instructed to receive and give immediate surgical care to the injured, *as they are taken from the wreck*; also instructing the stretcher-bearers where to carry their burdens. The dead are conveyed to some separate point close at hand and, covered with blankets, placed under one man guard. The workers, provided with proper tools, lift the wreckage just high enough to release the body of any victim, who is then drawn carefully out. The first-aid surgeons are close at hand to receive the patient, examine the general condition and ascertain the extent and severity of the wounds; stimulants are given and the wounds receive first-aid dressing. Especial care and attention is paid always to hemorrhage control, using for this purpose either the elastic constrictor, although better, if the bleeding points can be readily found, the artery-forceps. Sterile dressings are then placed in immediate con-

tact with the injured surface, bandages are applied, and the patient is placed upon the stretcher or substitute therefor; the bearers are then instructed where to carry their burden.

It is wonderful how many victims can be cared for in this systematic manner, and with safe speed, too. It will be seen that this plan provides aid as quickly as the victim is released from the wreckage.

The patient is then carried to the division-surgeon's headquarters, where further surgical care, of a more definite and thorough nature, is given; the whole amount of time consumed being only as long as it takes the first-aid dressing to be applied and the patient's being carried to the headquarter location.

The condition is now carefully examined and any emergency-operation determined upon is done. The patient then is placed under the care of the nurse. *in the car* which it is designed will carry the patient to the nearest hospital; the object being to move the injured person as few times as possible.

The Immediate Surgical Care

No operative measures, except such as are imperative and necessary, should be performed at this time, and first-aid surgeons working on the victims as they are removed from the wreckage should be instructed to limit their efforts to covering the wound with simple sterile gauze pads and bandaging firmly in place—this, of course, after stopping hemorrhage.

The point brought out in having the forceps applied for hemorrhage control at this time has been criticized, but no risks should be taken in this matter; and it is certainly more sure to apply the forceps, especially where the bleeding vessel is visible or easily found, than hastily and imperfectly applying a constrictor and having the patient continue slowly to bleed to death. It is not absolutely necessary to tie off the bleeding point, as the forceps can be so applied as afterward to be included in the bandage, thus becoming a landmark for the division surgeon later on, indicating to him his first duty in caring for that particular case.

The injured having been cared for, they are then conveyed to the nearest hospital, there to undergo removal of any unclean and damaged clothing that has not already been removed, their wounds to be redressed if the bandages have become contaminated with blood, and such further operative measures instituted as have been found im-

possible to perform previously. This latter would mean the completion of an amputation for which the snipping off of a nearly severed limb had been done to facilitate transportation, operating for compound depressed fracture of the skull, and other operations of that nature. It should be borne in mind, however, that a compound fracture of a leg or arm, wherever there is the least chance of saving the member, should be carefully cleaned and disinfected at the wreck, making the temporary part of the dressing only the retaining apparatus.

Dislocations may be reduced under an anesthetic, or even without, at the place of accident; simple fractures temporarily splinted; burns given complete dressing, except where cinders and dirt are ground into the wound; suturing for the control of hemorrhage—all these may be done at the wreck; but the surgeon should remember that no time must be wasted, and should delay his critical and time-taking operative measures until his patients are in the hospital and all proper facilities are at hand.

Some Forms of Injury

Railway accidents are productive of high mortality, for several reasons. First, the shape of the car-wheel with its projecting flange, this always producing a particularly mutilating form of injury; then the weight of the car superimposed upon the flanged wheel and pressing upon a steel rail; further, the speed of the train, this exerting a terrific force when coming in contact with a train going in the opposite direction; finally, the shock produced by the concomitant horrors of a wreck and the delay in receiving first aid—all these are factors to be taken into consideration.

It is now the plan, carried out by most roads, to instruct their employees in the use of the first-aid outfits carried on each train, and a gratifying decrease in mortality is noticeable as a direct result of this course of instruction. Where formerly the surgeon found wounds covered with dirty dressings, old handkerchiefs, tobacco, and such things, he now finds at least a pad of sterile gauze in contact with the injured part—thus the first and earliest step in the prevention of after-contamination has been attended to.

Two noteworthy peculiarities of railway injuries are the extensive and serious subcutaneous lacerations produced by being caught between the bumpers of the cars; the odd and characteristic feature being that, while the skin is not broken the muscular

tissue underlying it is extensively torn or crushed. The other is the wholesale stripping or tearing of the skin from the underlying muscular structures, produced by the pinching or constricting lateral force exerted by the wheel pushing the limb along the rail without actually running over it, or by pushing the limb off the rail and pinching a long fold of skin between the flange and the track while the limb lies closely parallel to the rail. These two types of injury should always be dressed without any attempt at suturing, at least for a few days, or until the "limit of virulence" has declared itself.

This open method of treatment is also effective in all injuries where, through any accident contamination, there is any suspicion of infection by the tetanus-bacillus, it being of the anaerobic type and prone to development only when kept away from light and air. The injection of the tetanus-antitoxin, 1500 units, should also be made. First aid of an amateur nature will sometimes use horse-blankets for covering the patient, and these cases should always be thoroughly and carefully cleaned, the wound treated by the open method, and tetanus-antitoxin given.

The first-aid care of hemorrhage is of the utmost importance in railway-cases, and the outfit always contains an elastic constrictor. It is better to apply this as close to the wound as possible and yet feel safe that it will not slip or become displaced; for, any constrictor, where it remains on for any length of time, will produce more or less devitalization of the tissue underneath, while oftentimes the wound is of such a nature that the surgeon must save every inch of skin possible—and any tissue lost from constrictor devitalization becomes a serious affair. It is better to apply the tissue-forceps to the bleeding-vessel wherever practicable and tie off at once, thus avoiding any risk.

If the hemorrhage be from a scalp wound or any place on the trunk, cleaning out the clots and packing the wound with gauze, then applying a firm bandage will usually be sufficient until the case can be permanently cared for.

First Aid in Fractures

In the immobilization of fractures, use any *well-protected*—that is, padded splint or substitute for the same (any board, cane, umbrella). If none such is at hand, tie the injured leg to its fellow, while an injured arm may be bandaged closely to the body.

In cases of compound fracture, take enough time to disinfect thoroughly and carefully,

no matter what other cases have to wait, for the first dressing in these injuries tells the story for the future, so one should be sure that at this first dressing everything possible is done to make the story have a happy ending. Here is where tincture of iodine will do wonders. Use it freely.

When your patient is brought in for permanent dressing, look *first* of all at his general status, and see whether he is in good physical condition, before you even look at the wounds—the people have a deep-rooted prejudice against surgeons whose patients die. Also, the public has a right to be thus prejudiced, and it is only by care and attention to the vital processes and the assurance that they are rightly carried on that the surgeon can help to overcome this feeling.

Hospital Railway Cars

The question of a car fitted especially for the handling of railway-accident cases has been given careful consideration at various times and by various roads, and, while the plan has its advocates and opponents, it has not been universally adopted in this country, neither has it been universally condemned. The cost of preparing such a car would be considerable, probably being from \$15,000 to \$18,000, and when finished and ready for use it would be available possibly on but two divisions of the road, covering a territory of maybe 300 to 400 miles. Thus, to provide for the care of the entire system, would mean building and equipping 20 or 30 of these cars, depending on the size of the road; and this would be exclusive of maintenance and expense of moving. For these reasons, as well as the fact that, when time and speed are the great factors (and it has been estimated no time and speed could be saved by the use of hospital cars), they have not been installed on many roads in the United States.

There are points well worth considering, however, in the fitting up of a car for first aid and to become part of the equipment of the wrecking-train. Such a car could be made from a converted day-coach from which the seats had been removed and an emergency operating-room fitted up in one end by partitioning off about ten feet of space. The remaining space could be utilized as a general ward and its floor-space covered with cots for the reception of injured persons. Ten feet could be partitioned off from the other end of the car for a store-room for surgical supplies, nurse-room, and drugs.

Such a car would not entail a great initial expense, could be used for the surgeon's

office and examining-room for employees, and would at all times be ready to be taken out with the relief-train on short notice. It would serve admirably for the care of accidents happening in the yards, and, in case of a serious accident which required transportation of an injured person to a distant point, could be coupled to the regular train and the case cared for and watched during transit to the better advantage of all concerned. Cases of contagious disease requiring transportation over the division could well be placed in such a car, which could afterward be rendered sterile by thorough fumigation, thus protecting the regular passengers of the road from the danger of infection. The fact that hospital-cars were in use in Germany and Belgium, even before the present war made it necessary, would seem to point to their value and possibly serve to incite us of America to adopt them.

Railway Hospitals

Whether the railway shall own and control its own hospitals depends largely upon the individual past experiences of the chief surgeon, and the road should accept his indicated policy either way. It has been found of the utmost value, however, to have railway-owned and -controlled hospitals, and for many reasons, the chief of which is, that the chief surgeon and the division surgeon under him could have direct supervision of a patient *until complete recovery*—an important factor not only from a physical, but from a legal standpoint as well. It is not to the advantage of the patient to pass from the hands of one surgeon to another, even when they are

equally competent, for experience has proved that the man who has dressed the case first or supervised the dressing should continue in the care of such case until recovery. The first dressing is all-important, and no surgeon likes to wash another's "dirty dishes."

The hospital should be located at the division-point or midway in a division, so as to cover the largest amount of territory and be the more readily accessible. It need not contain more than twelve or fifteen beds. Then, when the patient is very seriously injured, the fact of the hospital being within easy distance will be appreciated by reason of lessened distance for transportation and lessened mortality rate. It is not at all necessary to maintain a larger, or base, hospital, if the chief surgeon uses care in the appointment and selection of his division surgeons—a good man can do more with fewer conveniences than one less skilled with the most complete equipment.

Patients should be kept at the hospital, when possible, until complete recovery has taken place; for, convalescence is always retarded when the patient is allowed to go home—the hospital regime is the best atmosphere for railroad and other industrial cases, not only for physical, but for psychic reasons as well.

It is sometimes found a valuable aid to recovery to establish a convalescent-home adjacent to the hospital, where those patients able to exercise in the open air can be placed for a week or two previous to discharge; the division surgeon thus maintains personal supervision during the entire care of the case—an important factor.

Adventures of a Frontier Doctor

III. A Ride for Life

By CHARLES STUART MOODY, M. D., Hope, Idaho

ABOUT once every six months I forsake my lair in the mountains of Idaho and descend upon a considerable city that lies about a hundred miles to the westward, there to take in the bright lights, renew my allegiance to the God of Healing, and, incidentally, foregather with a pair of professional brethren who are especial "tillicums." In addition to showing me how they do surgery, one or the other of these always takes pity upon my benighted and heathenish condition and invites me for a ride in his high-powered

automobile. Once inside, I recline upon the yielding upholstery of the car and mine ear is made glad by the purr of the powerful machinery, the while the proud owner descants upon the hill-climbing capabilities of his "wonderful" machine. And then I discover that, though the machines are of different make, each of my good friends has the very one best on the market.

I confess, I get a great deal of pleasure out of these rides, all at no cost to myself, what-

ever. In fact, I think, sometimes, that I have rather the best of the bargain—I get the ride, while my friend bears all the expense. As we glide over the smooth pavement, I sometimes half wish that my own professional lines had been in more urban places, where I, too, might own such a car. Then, however, I pause and call to mind a ride I once made on Black Prince, when a life was at stake; and there comes a realization of the limitations of even the most powerful autocar, whereupon my faith in a good, stout riding-horse revives and is made but stronger.

Black Prince

Let me tell you about Black Prince. He wasn't much of a horse to look at—never would have taken a prize at a horse beauty-show, nor was his gait anything to go into rhapsodies over. He was just a long, lanky, scrub horse, half American and half Indian cayuse, black as a coal, save for four white feet and an ugly white blotch (an inheritance from his Indian ancestry) that extended halfway down his long homely face. He had a temper like a mother-in-law, but his stamina was one that would shame a mountain-goat. I bought him from an Indian one day early in the spring, when the poor fellow had not had a decent meal for months and was nothing but a heap of not too animated bones. I didn't ask the Indian where he got the horse; in the first place, I didn't care one way or the other, and, in the next, the redskin would have lied about it anyway. Then, having no immediate use for the horse, I turned him into the pasture with the admonition to go and fill himself up, so that he would not bring upon his master the blush of shame should I ride him.

After two months in the meadow bottom, Black Prince, as I had named him, grew round and sleek, and—mighty mean. The first time I attempted to mount him, there was what we of the West, in our expressive vernacular, speak of as a "circus." As the "circus" went on, that black devil did some tall and lofty bucking, but I succeeded in staying with him and on him, just long enough to enable me to select a reasonably soft place to light upon—then I struck *terra firma*. It took a full month of unwavering patience and kindness to bring his horseship back into anything like reasonable docility.

I had owned Black Prince longer than two years and he had carried me over many hundred miles of our rough mountain-trails, when I had occasion to put him to the supreme test. That test he stood nobly,

but after that he was but a wreck of his former self. So, I pensioned him off, and he spent the last years of his life on an upland meadow, being cared for in that manner that we humans think is best suited to animals of his kind.

How the Accident Occured

The thing came about in this wise:

A party of wealthy easterners—consisting of father, mother, grown daughter, and two sons, aged 12 and 14, respectively—were making an extended camping trip through the Bitter Root Mountains; their packing trip to start at the eastern slope of the mountains and terminating at Lewiston, Idaho, on the western border. They were under the guidance of my friend Lew Roberts, who had met them with the pack-train at Stevensville, Montana, early in July. At the time of which I speak, the party was encamped at Jerry Johnson's Hot Springs, on the Lochsa fork of the Clearwater River. There is a thermal spring at this place which is reputed to possess certain medicinal properties and is quite a favorite camping-place, and this party contemplated remaining there for several weeks. Jerry Johnson's cabin is (or was) the only human habitation within hundreds of miles—the only house in a large intermountain region greater in extent than the state of Vermont. It was an ideal place to make a camp. A broad grass-covered meadow stretches out in front of the cabin, behind tower the cloud-capped summits of the Bitter Roots, below flows the crystal-clear river that teems with great trout, the hills are replete with game, and acres upon acres of luscious berries grow on the foothills in their season.

A Hurry Call Into the Mountains

It was late in July and I was sitting in my office, half-dozing over a magazine, when a horseman came dashing up, his mount covered with foam. It was my friend Roberts. He reeled into my office half-dead from fatigue.

"For God's sake, Doctor," he exclaimed, "get your horse and beat it to the Lochsa, one of the boys has been shot."

"Where? How?" I questioned.

"He's shot in the stomach. I don't know how it happened. I had been out picketing the horses, when they told me, and I saddled Ranger and came. The boy was alive when I left, that is all I can tell you."

"Where are they?"

"At Jerry Johnson's cabin."

I had not been idle while I was questioning Roberts, but was busy throwing things into an emergency-case.

In fifteen minutes from the time Roberts rode up to my door, I was mounted on Black Prince headed for the Lochsa.

Now, I wish you would get a good map of Idaho and locate the town of Orofino on the Clearwater, then follow eastward until you find Jerry Johnson's Warm Springs on the Lochsa. It is sixty miles as the crow flies, but more than twice that distance as the trail runs. One hundred and thirty miles of mountain fastness untraversed by any road; nothing but a dim mountain-trail traveled by the Indians and the few whites who dare to penetrate the country in search of game or gold. It is a region overgrown with gigantic firs and pines and cut by immense ravines through which torrents pour, and the bald ridges capped by towering cliffs of dark basaltic rocks reaching up to the very clouds.

I Start on the Long Ride

It was two o'clock in the afternoon when I started. Sunset found me at Hartmann's on the Musselshell River, the last white habitation that I should encounter. Here I halted for a few minutes, drank a glass of milk and allowed Black Prince to breathe. As the shadows of night drew on, I mounted and set out once more. Fortunately I knew every foot of the trail, night or day, and darkness was no bar to my wild ride. Black Prince took the trail across the Musselshell meadows at a swinging lope and breasted the mountain on the opposite side at his long swinging trot.

All night the noble horse kept up his gait and daybreak saw me at the Indian Post Office, the highest point on the trail. As the sun rose, I looked down far below upon the winding Lochsa, a mere thread of silver in the dark-green of the conifers, miles and miles away. Do not imagine that because I could almost see the tents of the encampment I was near to my destination. You do not know western trails. Many weary miles yet lay between me and my patient, and Black Prince was beginning to grow weary; his sides were heaving, his head hung down, his ears no longer pointed keenly forward, but sagged from fatigue. Yet, the brave fellow kept doggedly on, with the same ceaseless swinging trot. The descending trail wound down the steep mountainside, in and out among the boulders, turning and twisting upon itself like the folds of some

gigantic serpent. It was past midday when I reached the Lochsa and forded that stream. Only six miles more. But those six miles were the longest of the entire journey. I did not dare to urge the animal, which was now reeling as it walked.

And now I kept asking myself, what shall I find when I reach the camp. You well know the lack of accuracy of a layman with regard to anatomical locations. Roberts had said that the boy had been shot in the stomach. I was experienced enough to know that this description was rather indefinite. The wound might be anywhere from the symphysis to the ensiform cartilage and still be within the confines of the "stomach" as understood by Roberts.

I Reach the Camp at Last

At length the white tents gleamed through the dark foliage of the pines, and as I rode into camp I was dead-tired and sore from the long sojourn in the saddle. As I rode up, the father met me.

"Is he still alive?" I asked.

"Yes, doctor, thank God."

Entering the tent where the wounded boy lay, though weary and exhausted, I made a hasty examination, for I felt that there was no time to be lost. The little fellow was quite cheerful and smiled up at me as I knelt beside his couch. I found his temperature normal, circulation and respiration good, a little tenderness over the entire abdomen, and ascertained that it was a penetrating wound, on a level with and just to the left of the umbilicus. I then elicited the following peculiar history. The two boys had bored a hole in a small spruce-tree, with a bit, about three feet up, and into the hole they had then inserted a loaded rifle-cartridge. Using this cartridge for a target, they began firing at it with a small-calibred rifle. After several shots the younger one made a center shot, this exploded the cartridge in the tree, when the shell blowing out, struck the youthful marksman in the abdomen, where it buried itself.

Improvising a sterilizer out of a five-gallon oil-can, I soon had instruments, towels, and dressings cooking over an open fire. After scouring the cooking-vessels with sand and soap, I felt safe in boiling water in them. I found the young lady of the family a very intelligent and cool-headed young woman, and, so, pressed her into service as assistant. In an hour everything was ready and the young fellow anxious to take the anesthetic, "to see how it felt." In a few minutes he

was in the land of dreams. I proceeded to bare the abdomen, scrubbed this as well as possible, made a 2-inch incision, and located the empty cartridge-shell and removed it with a pair of hemostats. A large quantity of pus followed. I then washed out the pus-sac, gathered up the shreds of shirt that had been driven into the cavity along with the cartridge-shell, and found that nature had effectually walled off the cavity and that the pocket of pus was all that had resulted

from the accident. I packed the pus cavity with iodoform-gauze, than asked for something to eat.

Leaving the older sister to watch at the bedside, I fell asleep and knew no more until the following day. The youngster was lustily yelling for something to eat, and in a few days he was all right again.

Incidentally, the check which the father sent me in due time was the largest fee I ever received for my services.

Vaccine and Serum Therapy in Everyday Practice

II. Theory and Rationale of Vaccine Therapy (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

The Opsonic Index

IN THE early days of bacterin-therapy, every writer on the subject laid great stress upon the supposed necessity of determining the opsonic index, both before and after the administration of each dose of the bacterin. A vast amount has been written about the opsonic index, nevertheless—although we now know that the value as a guide to correct dosage and interval between doses was greatly overrated—an explanation of what is meant by the “opsonic index” may not be out of place at this juncture.

Leukocytes (“white” blood-corpuscles) are separated from freshly drawn blood by means of centrifugation, and these are repeatedly washed, in order to free them from serum. Next they are mixed with measured quantities of the patient’s blood-serum and a fresh living culture of the variety of pathogenic bacteria known to be, or suspected of being, the infective agent responsible for the patient’s ailment. This mixture is sealed in a small glass tube and incubated for fifteen minutes at 37° C. The closed ends of the tubes are now broken and microscope-slides are “spread” or “smeared” with some of the contents of the tube. The “spread” preparation is stained with suitable aniline-dyes and examined under the high power of the microscope. At the same time that the opsonic estimation is being made with the patient’s serum, another is made, like it in every particular, except that the blood-serum used is taken from a “normal” individual, or, better, the “pooled” serum obtained from a number of supposedly “normal” indi-

viduals. The term “normal” is used advisedly, for the obvious reason that we have all, at various times in our experience, been infected with many varieties of bacteria. However, to obtain the “pooled” serum, it is taken from persons who have not for some time past suffered nor at the time are suffering from the particular variety of infection which the patient is presumed to have. The mixture containing the pooled serum is used for “control” tests and as a standard for comparison.

Upon examination of the spreads under the high power of the microscope, it is seen that the leukocytes, or at least the polymorphonuclear variety of leukocytes, have, during the incubating process, ingested a variable number of bacteria. An accurate count if made of the number of bacteria contained in each of a large number of leukocytes, and an average is struck. This determination of the average number of bacteria in each leukocyte is made in the case of the mixture containing the patient’s serum, and also in that containing the pooled serum. As a basis upon which to estimate the opsonic index of the patient, the index of the “normal” persons from which the “pooled” serum was obtained is taken as 1.0.

Now, assuming that the average number of bacteria ingested by the leukocytes incubated with the pooled serum is 12, and that each leukocyte incubated with the patient’s serum took up, on the average, only 9 bacteria, then the patient’s opsonic index would be 9-12, or 0.75. If, however, the average number of bacteria ingested by the leuko-

cytes incubated with the patient's serum proved to be 18, then the patient's opsonic index would be 18-12, or 1.50.

Now, from inspection of the foregoing, it can readily be surmised that a determination of the opsonic index requires a great deal of time, the strictest attention to technic, and considerable apparatus; and even in the hands of experts in laboratory-work the results gave such wide variations as to make the opsonic index a very questionable guide upon which to base dosage, interval, and other factors. Most happily, however, it was soon discovered that the clinical symptoms alone furnished a very reliable guide; in many cases, indeed, much more so than did the cumbersome opsonic-index determination. So, the *first bugaboo* of bacterin-therapy was disposed of.

Varying Manifestations of the Opsonic Index

Before leaving the subject of the opsonic index, it would be well to say a few words as to its behavior in health and in infections. Take the case of a patient having furunculosis.

While the infection has the upper hand in the fight, showing a condition of lessened resistance of the patient's tissues, the opsonic index will be found to be pretty constantly below normal, say, from 0.4 or 0.5 up to 0.7 or 0.8. This falling of the opsonic index below normal is known as the "negative phase," of which we shall speak more fully a little later. When, subsequently, the immunizing mechanism of the body gains the mastery of the invading bacteria, it will be found that the opsonic index is rising, until it reaches or exceeds the normal index as represented by 1.0.

When a proper-sized dose of a bacterin is administered—assuming the opsonic index to be normal or below normal—there at first ensues a brief negative phase; in other words, the index falls for a period lasting from a few hours to several days. Following this negative phase, the index rises to a point considerably higher than the original level. This second phenomenon is known as the positive phase, and this lasts a variable length of time, usually several days; then it tends to return to or below normal, this fall being coincident to a using-up of the antibodies or immune-substances formed in response to the injection of the bacterin.

It must be remembered that the time for a second dose, and succeeding ones, of a bacterin is before the positive phase has

entirely worn off. By observing this rule, a "cumulation," or a piling-up of one positive phase upon another, may be obtained. On the other hand, after the administration of a suitable dose of a bacterin, a second dose must not be given while the negative phase is on, nor before the positive phase has supervened; for, if this admonition be disregarded, an exaggerated and prolonged negative phase may be produced, to the decided detriment of the patient.

Hence, until one becomes experienced in the use of the bacterins, it is well to administer only a small dose at first; then, at the end of twenty-four or forty-eight hours, if there is no well-marked positive phase and at the same time no noticeable negative phase, the dose should be repeated, in somewhat increased sizes.

The *negative phase* was the second bugaboo which deterred the general run of medical practitioners from employing the bacterins. The danger of an excessive negative phase was dwelt upon at about the same time that the necessity of frequent determinations of the opsonic index was being insisted upon. Now, however, when the bacterins have been in steadily increasing use for over fifteen years, the dosage has been pretty well worked out.

The bacterin containers, as they come from the laboratories, usually have the maximum and minimum dosage printed on the label, along with the number of millions of killed bacteria per cubic centimeter. Consequently there is now very little chance of producing a harmful negative phase as the result of an overdose of a bacterin. If bacterins are administered in anything resembling reasonable dosage, no harm will result.

To illustrate this point, I quote Dr. Timothy Leary, of Boston: "In general infections, vaccines [bacterins.—W. C. W.] are harmless. This was indicated in a case in which, through error, 10 Cc. of staphylococcus aureus vaccine containing 10,000,000,000 organisms was injected, at one time, as an initial dose. No harm resulted. In a second case, the same dose produced temporarily a collapse, with prompt response to heat and stimulation." One can easily imagine what would be the outcome if such a mistake were made in the size of a dose of a gelenical preparation of aconite, digitalis, belladonna or any other of the powerful vegetable drugs or their active principles. I can truthfully say that, after an almost daily use of the bacterins during the past five years I have never seen a harm-

ul negative phase produced by a dose of a bacterin

And, so, the second bogeyman is disposed of. The dosage of bacterins is no harder to master than is that of drugs; in fact, it is easier, for, the dosage of the bacterins is nearly always printed on the container.

The Preparation of Bacterins

The first step in the preparation of a bacterin is, to procure the infecting organism or organisms in pure culture—that is, unmixed with other varieties of bacteria. This is work for an expert bacteriologist, hence, we will not enter into details as to how this is accomplished.

In the case of an "autogenous" bacterin, the causative germs are obtained from the lesions of the patient himself. In the preparation of "stock" bacterins, the pathogenic bacteria of a given variety are obtained from a number of different sources, the resulting bacterin being "polyvalent," that is, it contains several (usually about a dozen) *different strains of the same variety* of bacteria. The "autogenous" bacterin contains but a single strain, the same as that which is responsible for the patient's disease.

Slant tubes of solid culture-media are inoculated with the microorganism from which the bacterin is to be prepared and are then incubated, usually for twenty-four hours. The growth is then washed off with sterile physiologic salt solution and the emulsion well shaken, so as to break up any masses of bacteria. A definite quantity of the emulsion of bacteria and saline solution is now examined under the microscope and

the number of bacteria to each cubic centimeter is estimated.

This counting is done in various ways, usually either by direct count, using the common erythrocyte counting-apparatus, or after the method of Wright. In this latter method, equal quantities of freshly drawn blood, bacterial emulsion, and sterile salt solution are thoroughly mixed together. A spread preparation of the mixture is then made upon a microscope-slide, dried, fixed, and stained. The number of bacteria and the number of red corpuscles in a given field are then counted; several fields being counted and an average obtained both for the bacteria and the corpuscles. The number of red corpuscles in a cubic millimeter of blood being known, it is a simple problem in proportion to determine the number of bacteria in a like quantity of the bacterial emulsion.

Next, the emulsion of living germs is diluted so that each cubic centimeter of the bacterial emulsion will contain the required number of millions of bacteria. The bacteria are now killed by heating the liquid at a temperature of about 55° to 60° C. for a half hour or so. The degree of heat necessary to kill the bacteria varies considerably, according to the species of microorganism involved.

Culture-tubes are inoculated with the bacterin, to make certain that the latter is indeed sterile. If no growth results in the culture tubes, a small percentage (usually 0.5 percent) of phenol or of trikresol is added to the bacterin, in order to prevent contamination from without the container. The bacterin now is ready for use.

[*To be continued.*]

American Medicine for American Physicians

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INTERESTED, as I have been, for forty years, in a study of the *materia medica*, in an effort to determine the exact medicinal properties of individual drugs, with especial reference to their reliable and, if possible, invariable action upon exact conditions of disease, it is not at all surprising that the entire field of investigation has separated itself into distinct classes. The grouping of remedies with reference to their mineral or chemical characters, to their vegetable origin, to their synthetic production, is a grouping that suggested itself, but these dis-

tinctions have not been studied as carefully as they should be with reference to any rational influence that they may exercise upon the human body in disease.

My studies have naturally caused me to discriminate against remedies that are not, in any of their influences or in the physical properties or chemical constituents, an essential part of the human system. This I cannot here enlarge upon, but it is an important discrimination. That class of remedies which act upon the system in disease in much the same manner as do nature's foods in health

have gradually, after long years, appealed to me as the most rational of all remedies.

As I have studied this rational line, I am more and more convinced, because of their essential, stable, and permanent character, that no class of remedies will ever replace, in their specific adaptation to the common phases of disease, the vegetable remedies. I am confident that they are of very first importance, as they were considered in all past time, except in the last three or four decades, when all attention has been centered upon surgery, while the colleges nearly ceased to teach medicine.

I am not, by any means, a botanist and have never been classed as a botanical physician. I have made myself as conversant with the remedies of one class as I have with any other; in fact, I began my studies with the old stable inorganic class of remedies—which will always hold their place. I am confident that each of the classes has an important place in therapeutics, when it gravitates into that place. The synthetic remedies have the narrowest field and as a class are least useful. But, the underlying truth, the basic permanency of the influence of the vegetable remedies and the natural manner in which they stay the progress of disease, in which they influence the normal vital processes, encouraging them to reassert themselves and assume control of the vital functions of the various organs of the body, is so different from the influence exercised by any other class of medicines that naturally I have found myself developing such a predisposition to faith in these remedies as I cannot possibly have in any other class; and, yet, I by no means am ready to exclude other remedies or other measures.

I am watching, with the keenest and closest observation, the development of the serums, antitoxins, and hormones, the evolution of the truth concerning their reliable action, in order that I may see, if I live long enough, whether these may not be superior, if not in a general way, at least in certain specific lines. If they are, they should have their place; but, until they are so proven, I must necessarily keep my faith in the action of vegetable remedies.

America Yields All The Drugs We Need

Just at this particular time, when foreign drugs can no longer be obtained, because their importation has been cut off, we are forced to look elsewhere for our supply; and just at this psychologic moment the knowledge of our own products that I have acquired

brings me, with startling sharpness, to the recognition, if not (at least to myself) the discovery, of the fact that *American physicians have right here at home everything we can possibly need in the cure of the sick* in a most reliable, permanent, sufficient, and satisfactory class of remedies, that either have had their origin in this country or the knowledge of which has been developed in this country.

Coming now to the consideration of "American Medicine," I shall include in that term all those remedies the working-knowledge of which (the clinical observations and bedside experiences) have developed in the United States. When I speak of American medicines, I refer to those remedies that have their origin in the Americas and which have been developed within the United States.

The Contributions of the "Schools"

In the development of these remedies, all schools of medicine have taken part. Unfortunate it is that the dominant school has but seldom recognized any labor other than that done by its own members. This has engendered a prejudice, especially on the part of its students, that has prevented many an anxious young physician from looking into the action of some very superior agent which on occasions might have assisted him in some trying emergency.

So engrossed has this school been in surgery, and so very much has been accomplished in this field, during the time when the knowledge of these native vegetable remedies was developing, that the larger attention has been given to drugs by the adherents of the Homeopathic and the Eclectic schools of medicine; both of these being largely therapeutic rather than surgical schools, as is the dominant school.

It certainly would seem to be consistent with the spirit of the age, with the advancement of civilization, with the general intelligence of our time, and with the inclination to put down bigotry and prejudice that the surgical school should have been as willing to look into the measures of the therapeutic schools as the latter ever have been ready to consider and adopt promising suggestions of the former.

In the work of the therapeutic schools, the Eclectic physicians have paid the largest attention to the medicines of vegetable origin probably for the same reason that I have given as influencing me in this study. After this brief diversion, let us return to the subject under consideration.

My aim, as said, will be to show that those remedies that are characteristically of American origin, I have some grounds for my belief, offer a sufficiency of resource in the *materia medica* for the physicians of America—in fact, of any part of the world—if they desire to demonstrate their sufficiency, or, indeed, their superiority.

The Active Principles Developed in America

No one will deny the right of the American physician to claim that the therapeutic development of the alkaloids—the active principles—is largely the result of American industry. Many of the proximate principles of the drug-plants were originally discovered in this country, and their separation and the development of the knowledge of their specific place in therapeutics can properly be placed to the credit of American physicians.

In an article in favor of the alkaloids, *The Medical Council* for December last says that there are listed in the eighth edition of the *Pharmacopeia* ten alkaloids, twenty-six alkaloidal salts, fourteen preparations of the alkaloids, besides others of this class, including seven resins, three approximate resins, and two glucosides—making a total of seventy in all. Together with those that are enumerated in "New and Nonofficial Remedies," a total of 130 have an established value; so that it may be said that active-principle medication has "arrived" in official literature.

During the early days of the alkaloids, but few outside of specialists seemed to be attracted toward them, while at the present time probably from 30,000 to 40,000 physicians in the United States depend upon these remedies as their principal medicines, while a very much larger number include at least a portion of this class of remedies.

It is now generally acknowledged that the proximate principle does not represent the whole drug in all its therapeutic influences; consequently, it is important that both the whole-plant drug and its active principle be studied, each independently. And in no country in the world, at the present time, are these drugs studied so assiduously or is there so much attention being paid to securing definite knowledge regarding both of these classes of remedies as by our own practitioners.

The very wide adoption of the alkaloids by the busy, isolated practicing physician, in his everyday practice in America, must be credited very largely to the persistence and

assiduity of one individual, namely, Dr. W. C. Abbott, just as the perfection of the fluid forms of vegetable drugs and the marked advancement of their definite, reliable, and invariable character is to be credited to one individual, Prof. John Uri Lloyd. And these two forms of organic medicine give to American physicians access to stable, reliable, thoroughly proven, and highly satisfactory remedial agents. It has taken at least half a century to accomplish this result, but I am confident that the time has arrived when we are justified in asking the world to accept the result of these observations as authentic, fully proven, and these preparations more dependable than any other known definite products.

Give Us Dependable Drugs

I cannot refrain from once more quoting from the article in *The Council* referred to, in order to confirm the correct character of the conclusions that our investigations have brought to us.

"The balanced therapist," we read, "has no prejudice for or against the active principle, or for or against the so called galenical products; but he has a prejudice against uncertain drugs, be they alkaloids or galenicals." Again, he says: "The day is fast passing in which 'so much' crude drug digested so long in 'so much' alcohol will pass muster as the proper way to make a tincture. This is the day of careful assay of each batch of the crude drugs and careful standardization of the finished tincture."

This method began with Eclectic physicians in the year 1870, and it is now approaching perfection in their "specific medicines."

Further, Doctor Blair adds: "We want our proximate principles and our galenicals to be equally dependable, for, we *need* both classes of products." And again he says: "To the physician who is obsessed by the idea that alkaloids have practically the sole place in the therapy of botanic-drug medication, we would urge a short course in the wards of any good hospital. To these men, as also to those who are prejudiced against the well-grounded advocacy of the alkaloids, we wish to urge the study of authoritative literature upon pharmacology and therapeutics."

"Some men," to conclude these quotations, "use altogether too much alkaloidal medication, while others employ alkaloids for too little if they hope to treat successfully sthenic cases of acute disease and the emergencies of practice."

To both of these, the advice is, that they study both classes of remedies until their methods are well balanced.

A List of American Remedies

In considering strictly American medicines, the following may be named as among the important remedies that either are indigenous to the Americas or to the United States' possessions, viz.: *rhus*, *gelsemium*, *veratrum*, *scullcap*, *macrotys*, *capsicum*, *cinchona*, *hydrastis*, *berberis*, *avena*, *coca*, *cactus*, *apocynum*, *lobelia*, *ipecac*, *grindelia*, *pines* and *spruces* (*turpentine*), *prunus*, *tolu*, *yerba santa*, *collinsonia*, *papaya*, *cascara sagrada*, *podophyllum*, *leptandra*, *iris*, *chionanthus*, *jalap*, *rhubarb*, *geranium*, *echinacea*, *baptisia*, *phytolacca*, *stillingia*, *gaulettaria*, *hamamelis*, *thuja*, *uva ursi*, *kava*, *hydrangea*, *salix nigra*, *saw-palmetto*, *darniana*, *serpentaria*, *black haw*, *senecio*, *helonias*, *caulophyllum*, *polynomum*, *erigeron*, *epigelia*, *guaiacum*.

These remedies not only are indigenous to America, but they have been developed almost exclusively in this country. In addition to these, there are other quite well-known remedies that are important in narrower fields; among them being *lycopus*, *blood-root*, *sticta*, *asclepias*, *boneset*, *dioscorea*, *juglans*, *eupatorium*, *mitchella*, and *fraxinus*.

But these two lists do not include all the remedies that I would call strictly American Medicine. In addition, as I have stated, we have a right to claim as a part of American medicines those remedies the therapeutic properties of which have been largely developed in our country; for, although now being raised in this country, we have, for most of them, been depending upon foreign countries to supply us. Under this heading, there may be mentioned *aconite*, *bryonia*, *cannabis*, *conium*, *hyoscyamus*, *oenantha*, *ergot*, *chamomile*, *pulsatilla*, *mistletoe*, *nux vomica*, *ignatia*, *eucalyptus*, *belladonna*, *calabar-bean*, *convallaria*, *adonis*, and *crataegus*. There are, in addition to these, a number of remedies, such as *digitalis*, that have been used freely in the old country, but their action has been studied more effectually among American physicians, the reports upon which have very much added to their value to the clinician. I could make up quite a list of remedies of this class.

We have a right, also, I think, to include among American medicines a considerable number of mineral remedies that once were well known, but were retired, to a large extent, during the "surgical period" of

medical progress, and are now being restored again. While more reports are reaching us from Europe than from America concerning, for instance, the use of iodine as an antiseptic, our own observations have been equally as important, and it has been left largely to American physicians to undertake to apply iodine, in the form of vapor, in the treatment of wounds and open ulcers.

Similar statements can be made concerning a large number of remedies. When we come to the consideration of biologic and laboratory products, we could name a number of firms in this country that have taken the lead in the development, perfection, and manufacture of scrums, antitoxins, and bacterins; and their products have not been excelled by foreign manufacturers.

All this is contributed to American medicine, and, when these facts are well considered, I am confident that the readers of this journal will agree with me that we need no longer go abroad for our tools wherewith disease shall be controlled and cured, but that we may use that which we have of our own in medicine, and the methods that American physicians have developed; and, when applied in specific and definite lines and in a specific manner, I will assert that we can readily prove that we have many things superior to any other nation.

It behooves us, then, to cooperate and work without prejudice, with energy and zeal, with the definite object in view of establishing for American physicians a reputation for superiority both of product and method, and of results as well. I shall take up, in another article in this journal, definite measures by which these facts can be proven.

Very much can, and will, be said further in this line, but to get at once at the crux of the whole question, I want to refer to a study and investigation that was made, in 1912, concerning the action of vegetable remedies and their use.

Some Studies Anent Vegetable Drugs

The Committee of the United States Pharmacopoeia has, among its other duties, the collection of statistics regarding the frequency of the use of the official and nonofficial drugs by the medical profession in the United States. At the time in question, an independent investigator was requested by the American Pharmaceutical Association to look into this matter and report at its next annual meeting (in 1912). This, to a limited extent, was accurately done, 30,000 physicians having been consulted. These physicians

were located in every section of the country. They were asked from what college they had been graduated and whether they were qualified to practice medicine under the state laws, but no other information aenent their professional affiliations was solicited. They were selected without regard to any school of practice. Those were selected who were engaged in the general practice of medicine, choosing a moderate number of physicians in the larger cities, in an effort to equalize the reports of the city and the rural practitioners. More than 10,000 reports were returned on the blanks that had been sent out.

Some most surprising revelations were made. Among the remedies that I shall mention of those that were reported, only the following were not official in the U. S. P. (all others being official remedies); namely: cactus, echinacea, thuja, bryonia, pulsatilla, collinsonia, passiflora, chionanthus, gaultheria, dioscorea, baptisia, trifolium, drosara, avena, ignatia, adonis, pinus canadensis, chelidonium, and erigeron. (The oil of erigeron was official.)

The Surprising Vogue of Cactus

Of these, it will be a surprise to the readers to find—notwithstanding cactus has been unreservedly condemned by the A. M. A. Council on Chemistry and Pharmacy—that it stood first in the list, 6229 out of the 10,000 physicians reporting that they were using cactus.

Now, please, bear in mind again that all but those I have mentioned as unofficial are official in the 1900 edition of the U. S. P. Hydrastis, aconite, gelsemium, and ipecac were named by more than 5500 physicians.

Between 5000 and 5500 reports mentioned digitalis, ergot, belladonna, nux vomica, hyoscyamus, and echinacea—in the order here shown.

Between 4500 and 5000 physicians mentioned viburnum, valerian, podophyllum, thuja, opium, cascara sagrada, bryonia, colchicum, capsicum, lobelia, pulsatilla, apocynum, and gentian.

Between 4000 and 4500 mentioned saw-palmetto, veratrum viride, hamamelis, phytolacca, viburnum, macrotys, collinsonia, can-

nalis, passiflora, chionanthus, arnica, strophanthus, cinchona (quinine).

Between 3000 and 4000 physicians mentioned sanguinaria, caulophyllum, cinnamon, rhus toxicodendron, colocynth, gaultheria, dioscorea, baptisia, asclepias, clatierum, iris, spearmint, stillingia, senna, leptandra, charcoal, helonias, jaborandi, grindelia, gossypium, stramonium, aletris, hydrangea, and licorice.

Between 2000 and 3000 physicians mentioned cubeb, guaiacum, taraxacum, santonica (santonin), calendula, crataegus, jalap, rhubarb, triticum, damiana, berberis, physostigma, sarsaparilla, xanthoxylum, trifolium, drosara, quassia, avena, scull-cap, ignatia, squill, erigeron, coca, adonis, conium, uvi ursi, lycopodium, convallaria, geranium, senega, staphysagria, chelidonium, pinuscanadensis, hops, calumbo, sassafras, eupatorium, and serpentaria.

I will not enumerate specifically those that were mentioned by less than 2,000, but among them are a great many that are named in the Dispensatory, as above specified, and a few that are quite well known. This investigation would certainly change our sentiment concerning the selection of vegetable remedies.

In order to establish that these reports did not represent any particular school of medicine, a similar questionnaire was submitted to Eclectic physicians. In comparing the answers sent in by this group of physicians with the reports made by physicians of all other schools, it was found that there was a great deal of similarity of opinion as to the action of certain given drugs.

I have said that more than 6000 replies in the first report mentioned cactus. In this later comparative report, it was found that cactus was twelfth in order among Eclectic physicians, while it was the ninth among those physicians belonging to other than the Eclectic school. Among the first 13 remedies that were found to be classed about the same by Eclectic physicians and by those of other schools were the following: gelsemium, aconite, bryonia, macrotys, echinacea, belladonna, veratrum, cactus, nux vomica, phytolacca, and pulsatilla.

(To be continued.)



What Others are Doing

BACTERICIDAL PROPERTIES OF COPPER AND SILVER

Since writers have doubted the direct bactericidal action of certain metals (e. g. copper, silver), Natonek and Reitmann, of Czernowitz, proved the fact (*Zeit. f. Hyg. u. Inf.*, Bd. 79, H. 2) by means of the following experiment: They placed clean coins upon a sterile agar-plate and allowed them to remain for a number of hours. After removing the coins, bacteria were sown all over the plate, and no growth occurred on the agar where the metal had lain, and even for some distance beyond the edges.

THE CARMINE-TEST FOR LEARNING THE MOVEMENT OF THE GASTRIC CONTENTS

While radiography offers positive evidence of the forward movement (or the stagnation) of the gastrointestinal contents, Doctor Strauss, of Berlin, warmly pleads for the more general adoption of the carmine-test for the same purpose (*Arch. d. Verd.-Krankh.*; cf. *Muench. Med. Woch.*, 1915, p. 442), maintaining that, aside from its simplicity and cheapness, it answers the same purpose, at least for all ordinary purposes, of determining how long ingesta remain in any portion of the digestive tract.

In the same number, Doctor Schuetz, of Wien, criticizes adversely all the "innumerable" methods proposed as substitutes for the one devised by himself—that is, the use of the sound for withdrawing from the stomach specimens of its contents for examination. This method, he asserts, should find general acceptance.

DIPHTHERIA-CARRIERS, AND THE NOSE

For years, says V. Engelmann, of the ear and throat department of the Israelitic Hospital at Hamburg (*Muench. Med. Woch.*, 1915, p. 397), he has maintained that little progress will be made with regard to the carriers of diphtheria-bacilli until first of all general attention is paid to the nose of those

who have had the disease or been exposed to the infection. In the present brief communication, Doctor Engelmann merely presents details concerning four children of school-age whom the mother brought for inspection, after a fifth child had recently died of diphtheria.

All four presented the appearance of health, although one had a slightly sore nasal ala, while in another one the tonsil was slightly reddish, with a hardly visible spot; and in the throats of these two a very few bacilli of the short variety were found. However, when the noses of these children were tested, all four revealed the presence of large numbers of the long and the short forms of the diphtheria-bacillus, besides the usual staphylococci and diplococci. The point made is, that these children attend school and that under certain favoring conditions the diphtheritic germs will become activated and they thus become a focus of infection. Hence, *cherchez la nez—toujours—always.*

HEXAMETHYLENAMINE IN TYPHUS FEVER

In a preliminary communication to the *Muenchener Medizinische Wochenschrift* (1915, p. 418), B. Coglevina, stationed in the military hospital at Graz, speaks in the highest terms of the service given by urotropin (hexamethylenamine) in combating typhus fever; although, he admits, it has been thus used in but a few cases. The idea underlying his trials in this direction was, that the substance is decomposed in the body into formaldehyde and thus serves as a constitutional disinfectant. He calls the results observed in this malignant disease "remarkable."

One notable observation in this urotropine-treatment—one in agreeable contrast from the quinin-therapy—was, that the disturbances of the central nervous system scarcely were worth noting; the author inclining to explain this by the proven fact that hexamethylentetramine specifically exerts a bactericidal action in the cerebrospinal canal. Furthermore, the patients so treated

remained free—or almost so—from the frequently very severe enteric symptoms attacking typhus-patients.

As to the dosage, Coglevina was guided by the fact, established by J. Crowe, that a daily dosage of 5 Grams of urotropin is capable of keeping the bile sterile. So, each patient was dosed as follows: 1 Gram of the remedy three times on the first day, four times on the second, and on the third day, and subsequently, five times. The precaution is necessary, to test the urine daily; however, in these patients, neither renal nor vesical disturbances were evidenced.

Incidentally, the only other treatment consisted in combating the high fever with cold-packs for the thorax and legs, and application of an ice-bag for intense headache.

FROSTBITE EXPERIENCES

Frostbite is presenting serious problems in the European armies, especially among the Germans. In one article, the *Wiener Klinische Wochenschrift* describes a series of 105 such cases; of these, 3 required amputation through the thigh. Besides the surgical treatment demanded, the methods applied were, alternate hot and cold baths, carbon-dioxide baths, and hot- and cold-air douches; wet dressings of pepsin and hydrochloric acid, to separate necrosed tissues; sterile gauze, smeared with boric-acid salve to cover the necrosing portions.

In *The British Medical Journal*, Davis writes that the most satisfactory treatment found was this: cocaine, 8 grains; olive-oil, 4 drams; lime-water, 4 drams; a little to be rubbed in twice a day, and the feet then wrapped in cotton wool. The addition of 2 ounces of liquid paraffin keeps the mixture from drying rapidly and delays oxidation. After the oil has dried on the feet, they should be powdered with a mixture of camphor, 25 grains; zinc oxide, 4 drams; starch, 4 drams. When the acute state has passed, the oil is mixed with increasing proportions of carbonized oil.

It is not always easy to tell just how much of the affected tissues is going to die. Generally some of the tissue will perish, while some may perish if the applications made are likely further to depress the vitality of the weakened tissues. Cocaine acts by dilating the vessels and letting in a better nutritive supply of blood.

Some years ago, the present writer had an edifying experience with the application of nuclein to an area where it was doubtful

whether the tissues would live or die. They lived; and he has always since acted on this hint of improving the local nutrition when needed. A friend accomplished the same object by applying a crushed tablet of the Bulgarian bacillus, and he testified that the almost instant regeneration of the imperiled parts was amazing. We have repeated this observation and believe that this principle should be widely applied in the treatment of wounds, as well as of frostbites.

With many, the application of local remedies is as senseless as the commingling of socalled expectorants. The doctor gets to using some one ointment (citrine or red mercuric oxide, zinc oxide or some advertised preparation) and applies that whenever he uses any ointment. Selection of an anti-septic, sedative, irritant, absorbent, protective, antipruritic or nutritive never occurs to him. Yet, nothing is easier than to observe the local action of remedies applied to the surface of the body, or to decide which is needed in each given case.

The Bulgarian bacillus is destructive to some morbific germs; but which ones, or how generally it is thus applicable, is yet to be defined by wide experiment. The early observations show that it is worth while to push this experimentation to the limits. Where is there another local remedy that is as safe and, yet, possesses such possibilities of usefulness as this one?

"ROPE" IN BREAD

Infection of bread by the potato-bacillus (*bacillus mesentericus*) causes the condition commonly known as "rope." During July, 1914, says G. L. Qualis (*Milit. Surg.*, June, 1915, p. 517), the entire bread supply of that part of the second division of the United States army stationed at Texas City, Texas, was infected with this bacillus. For the first few hours after baking, there was little or no change at ordinary temperature, but after twenty-four hours an odor developed not unlike that of unripe canteloupe. A few hours later, yellow or brown spots appeared and the bread became sticky in the center, these soft spots spreading rapidly, until within thirty-six to forty-eight hours the entire central portion of the loaf became a semifluid sticky mass, totally unfit for food. This portion of the loaf could be pulled out into long strings or ropes. In smears made from these ropes and stained with methylene-blue, the microscope revealed the presence of large numbers of a thick bacillus, with

rounded ends, together with free spores, both spores and bacilli being gram-positive.

A large amount of flour had been used in making this bread, and an investigation showed that this batch of flour was contaminated with the potato-bacillus. Some of these bacilli, it then developed, were present in all of the samples of flour furnished, even when coming fresh from the mill. Condemnation of the stock of flour was seriously considered; but it was finally discovered that the addition of acetic acid (or vinegar), in making the dough, served to prevent the development of the "rope." Tartaric acid likewise gave this protection, but it has no superiority over acetic acid except that it is solid and, hence, easy to transport.

TOO MUCH OR TOO LITTLE PROTEIN

If, on the one hand, cancer is caused by the consumption of *too much* animal food, as claimed by Beveridge (*N. Y. Med. Jour.*, Aug. 21, 1915, p. 387) and others; and, on the other hand, pellagra is caused by eating *too little* of the same kind of food, what, one may ask, can the average person do to escape the Scylla of pellagra and the Charybdis of cancer? Down south, if you eat too little meat, you will catch pellagra; if you eat too much of meat, you will die of cancer. And there you are!

OIL OF TURPENTINE FOR EXTERMINATING LICE

To some, the subject embraced in the title may seem to be overworked; and, yet, the announcement that plain oil of turpentine (rectified, of course—when accessible) will do everything claimed for the numerous other more or less expensive or rare agents must be esteemed of distinctly demologic importance; while, moreover, it should claim our attention now that louse-borne typhus fever is raging in our neighboring republic to the south.

The information in question has been published by Theo. v. Marschalko, of Klausenburg, in the *Deutsche Medizinische Wochenschrift*, who declares that the oil of turpentine is the best as well as cheapest substance for killing both body-lice and head-lice, as well as their eggs, besides other parasitic vermin. And what, from the sanitarian's point of view, is of greatest importance is, that this article can be obtained anywhere and because of its cheapness may be employed freely and without stint. It may be

applied direct or, for textiles and furniture, in the form of spray. Of course, the odor is objectionable, and clothing must be washed (lest the oil resinify in it), but that can not weigh when masses of naturally unclean people are concerned—such as the Mexican peons or the indigent negroes of the South—and at the same time economy and availability must be considered. One fact must be borne in mind, though; namely, that certain individuals are extremely sensitive to the action of oil of turpentine, in various ways, even sleeping one night in a freshly painted room being enough to cause bloody urine.

Incidentally, many military physicians now also seem to employ kerosene freely for the same purpose.

THE ERADICATION OF LICE

During recent months, we have published several abstracts from German and other foreign journals relative to the eradication of lice. In view of the fact that typhus fever and doubtless other diseases are transmitted by this troublesome parasite, this is a matter of considerable medical importance. In *The Journal of the American Medical Association* (Jan. 22, p. 273), we find a suggestion, originally proposed by Sabouraud, that xylene, a colorless liquid coal-tar product, will be found an effective pediculicide.

Xylene has a penetrating but not unpleasant odor and mixes with alcohol and ether, but not with water. Not only will it destroy the lice, but it will penetrate their ova and kill these also. When undiluted, it causes a sharp, burning sensation of the skin, but the pain thus produced does not last long and no blisters or dermatitis follows. The xylene readily evaporates and is highly inflammable, hence, should never be used near a fire or open flame.

A mixture of xylene, alcohol and ether is recommended by Faniel as being safe and efficient. For head-lice, cotton may be soaked with the mixture and the scalp thoroughly gone over with this xylene mixture, all the strands of the hair being drawn through the cotton saturated with the solution. Generally one application is sufficient to destroy all the parasites and nits. A treatment of one-half hour will be often fully effective, even when the hair is long, as in girls and women.

If the skin is broken by scratching, Lane recommends the application of a mixture of xylene with petrolatum, in the proportion of 4 parts of the former to 30 parts of the latter,

this to be followed latter by the xylene solution already suggested.

THE GERMAN CAMPAIGN AGAINST LICE

We have printed a good many quotations from German literature relative to the danger from typhus in the European war-zone and the role played by lice in its causation. That this disease is dangerous to the surgeon as well as to the soldiers, is demonstrated by the fact that it has claimed some illustrious medical victims—among them Jochmann and von Prowozek, whose claims to distinction, curiously enough, were largely based upon their investigation of this very ailment.

Without going into details regarding the measures and the practice resorted to for destroying the lice, it is interesting to find that most German investigators seem to have come to the conclusion that sulphur vapor is the simplest and cheapest as well as the most reliable agent for the destruction of the lice and their eggs in clothing and buildings.

Some very interesting experiments have been tried, especially in the prisoners' camp at Koenigsbruck. Nearly all the Russian prisoners were infested with lice and thus provided good subjects for experimentation. Their clothing was sterilized in sealed rooms, and the sulphur vapor developed was exceedingly concentrated.

NITROBENZOL-POISONING CAUSED BY INHALATION

Doctor Schultz reports the poisoning of six soldiers in his regiments by nitrobenzol-vapor, a constituent of a Polish proprietary exterminator of body-lice. The men (*Muench. Med. Woch.*, 1915, p. 458) had sponged their bodies with the liquid, while one also had sprayed his garments and then lain down to sleep. The latter exhibited the most severe symptoms and barely escaped succumbing. The room was filled with the vapor, which also seemed to contain some petroleum-ether.

All of the victims exhibited a peculiar yellowish-white hue of the skin, shading lightly into gray, and their lips were of a leaden-gray color; all experienced mental disturbances, while part of them had attacks of vertigo and fainting.

The one seriously affected lay unconscious seemingly dozing, breathing rapidly, with bronchial rales developing, and the pupils greatly contracted. The characteristic dusky color of the skin and the lips was very marked;

sharp pinching of the skin produced no sensible reaction. This patient, as well as the rest, was sponged over thoroughly, garments were changed, the room was ventilated; then was given injections of camphor and caffeine. Two hours later, he showed signs of pain when pricked, and consciousness slowly returned during the following day.

One other of the men had reapplied his chest protector and, so, toward evening, became unconscious, and did not recover until the next morning. The men retained their pallid appearance and feeling of weakness for several days. In one of them, albuminuria appeared, for which he was sent to the hospital.

We urge every reader of CLINICAL MEDICINE, working in the industrial centers, to familiarize himself with the symptoms and treatment of nitrobenzol poisoning, since this substance is one of the essential "primaries" used in making aniline dyes, photographic chemicals, coal-tar synthetic drugs, and high-explosives. And this industry is growing in America—and bound to grow.

POISONING FROM MERCURIAL INUNCTION

In discussing the various pediculicides—in connection with typhus fever—Dr. O. v. Herff (*Muench. Med. Woch.*, 1915, p. 457) mentions the fact that he personally once was seriously poisoned by a single inunction of one of his arms with plain mercurial ointment, which had been allowed to remain on for twelve hours. He tells that this brought on stomatitis, and salivation, besides other mercurial symptoms, which resisted treatment for several months.

This reminds us that in a recent American medical journal (which we have mislaid) fatal poisoning followed the use of several bichloride of mercury tablets in a solution used for vaginal douching.

CALCIUM SULPHIDE AS AN ANTIDOTE FOR MERCURY POISONING

We find in *The Lancet-Clinic* of December 18, last, a report of the use of calcium sulphide as an antidote for bichloride of mercury poisoning, presented by J. H. Wilms (see p. 555). He tried this remedy out experimentally on a dog which had received 7 1-2 grains (tablet) by mouth. Two days later, 7 1-2 grains of calcium sulphide was injected into the jugular vein of this animal, and after two days more it had fully recovered.

In 1913, says Doctor Wilms, while an interne in the Cumberland Street Hospital in Brooklyn, he had a patient who had taken with suicidal intent, 56 grains of bichloride of mercury by mouth. The woman made an uninterrupted recovery after having taken I-10 grain of calcium sulphide every half hour during a period of four days.

Wilms now has the records of 6 cases of mercury-bichloride poisoning treated with calcium sulphide. Of these, 5 have recovered, while 1, who had taken 110 grains of bichloride of mercury and was moribund when first seen by the Doctor, has died.

Doctor Wilms explains that when calcium sulphide comes into contact with bichloride of mercury, double decomposition takes place, the CaS plus 1Hg Cl_2 , yielding 1HgS (mercury sulphide) plus CaCl_2 (calcium chloride); the former insoluble and the latter incrt. Calcium sulphide is water-soluble in the proportion of 1 : 500, or about 1 grain in 1 ounce, when boiled.

Do not forget Carter's mercury antidote. It contains sodium phosphite and sodium acetate.

THE ALLEN TREATMENT OF DIABETES

No method of treatment of diabetes suggested within recent years has attracted such favorable attention from the medical profession as that offered by Dr. Frederick M. Allen, now connected with the hospital of the Rockefeller Institute for Medical Research. Already there is an extensive literature upon this method of treatment, while one book has been published devoted to this subject, namely: "The Starvation Treatment of Diabetes," by Lewis Webb Hill and Rena S. Eckman.* We are informed that a second edition of this book is now ready. In due season it will be reviewed in these pages.

In *The Journal of the American Medical Association* for September 12, 1914 (p. 939), Allen described in some detail his experimental investigations conducted upon dogs, these leading to the introduction of the improved dietetic therapy now adopted. Quoting Friedenwald and Linbaugh (*Interst. Med. Jour.*, Feb., 1916, p. 73), it was observed "that by destroying a portion of the pancreas (of dogs) and thus producing glycosuria, this condition could be overcome by fasting and that the animal could be placed on a diet which would maintain life without producing glycosuria again."

Allen applied this principle to the treatment of patients affected with diabetes; in other

words, the essential element in the treatment is the reduction of the intake of food, especially of carbohydrates, to the point where sugar disappears from the urine and, presumably, from the blood. This involves, first, a period of absolute abstention from food, or starvation; and for this reason the Allen method of treatment is often called the "starvation treatment" of diabetes. There are, however, other important features, which are briefly epitomized by J. T. Halsey (*New Orleans Med. and Surg. Jour.*, Feb. 1916, p. 501) as follows:

1. A period of absolute fasting, lasting ordinarily from one to four or five days—in extreme cases, as long as ten days.

2. A succeeding period of underfeeding, during which the patient is given much less food than is usually considered necessary. This period varies in length according to the presence or absence of sugar in the urine.

3. A very careful determination of the quantity of food (not only carbohydrates, but also proteids and fats) which the patient can consume without producing glycosuria or glycemia.

4. Careful avoidance of increase of weight, unless the patient is decidedly under weight.

Taking up these factors in detail:

1. *The inaugural fast.* It is stated that as a rule the inaugural fast need not be longer than two to four days. It is continued, as a rule, about twenty-four hours beyond the time necessary to secure absolute disappearance of sugar from the urine, together with disappearance or marked diminution of the acidemia. During the fasting period, the patient was originally allowed no food whatever, with the exception of whisky or brandy. Of this alcoholic, from 4 to 8 ounces may be taken in each twenty-four hours, in small doses at from one- to three-hour intervals. The alcohol is allowed, not as a stimulant, but purely as a food, since it provides available caloric values without danger of production of glycosuria.

The patient is allowed to drink plenty of water or weak tea (the latter without sugar or milk), and more recently also a small amount of beef broth (2 ounces four to six times in the twenty-four hours), provided the fast is prolonged beyond two days. If there is acidosis, alkalis may be given; and it is stated by Halsey that, even if no acidosis be present, it is probably wiser to give alkalis when starving the patient for the first time.

2. *The stage of underfeeding.* Following the period of fasting, the patient is put upon a restricted carbohydrate diet, in order to

establish the degree of the patient's tolerance. Vegetables containing 5 percent of carbohydrates are first allowed. An excellent diet list, covering the food requirement in these cases, with carbohydrates percentages, is given by Joslin (*Amer. Jour. Med. Sci.*, Oct., 1915). Among the 5-percent carbohydrate-vegetables, he mentions spinach, beet greens, sauerkraut, string-beans, asparagus, cucumbers, dandelion, cauliflower, tomatoes, rhubarb, eggplant, cabbage, radishes, pumpkin, and kohlrabi.

At first, about 5 ounces (150 Grams) of these vegetables should be given per day. In severe cases, when the green vegetables cannot be partaken of without producing glycosuria, they should be boiled three times, without change of water, thus reducing their carbohydrate content nearly one-half. The quantity of the 5-percent carbohydrate-vegetables can be increased by 3 or 4 ounces a day until the daily ration reaches 16 to 20 ounces (500 to 600 Grams). This will give a total carbohydrate content of 5-8 to 1 ounce (25 to 30 Grams).

If no sugar has appeared in the urine, the food then can be gradually increased by the addition of vegetables containing higher percentages of carbohydrates. For instance, the following vegetables contain 10 percent: onions, squash, turnips, carrots, okra, mushrooms, beets; the following contain 15 percent: peas, artichokes, parsnips, lima beans; the following, 20 percent: potatoes, shell beans, baked beans, green corn, boiled rice, boiled macaroni.

It is now permissible to add fruits, beginning with those containing the smaller percentage of carbohydrate, and increasing gradually, provided tolerance is maintained, until the patient is taking about 1 ounce of carbohydrate to each 20 pounds of body-weight. The reappearance of sugar or of diacetic acid in the urine is a sign that all nourishment should be stopped for twenty-four hours, food being resumed with about half the maximum ration required up to this point.

3. *Tolerance for other forms of food.* When there has been no glycosuria for two days, two or three eggs may be given, and, if no bad results follow, the number may be increased by two each day, until a daily ration of six is reached; or, meat may be allowed, increasing the amount by about 2 ounces daily, until the patient is taking 1-6 ounce of protein (about 2-3 ounce of meat) per 10 pounds of body-weight, daily. The reappearance of sugar or of diacetic acid calls for the same

measures as if caused by too large a percentage of carbohydrates.

Soon after proteins are allowed, small amounts of fat, in the form of butter and bacon, are permitted. This quantity should not exceed 1 ounce of the former or 4 ounces of the latter, until the patient is getting his full protein ration. At this time, the fat may be increased by 1-2 to 1 ounce daily, until the patient holds his weight or is receiving about 2-3 ounce per 10 pounds of body-weight.

4. *Control of weight.* Heretofore it has been almost an axiom that diabetics should be made to put on flesh, if possible. Allen's view is opposed to that hitherto advanced in this respect. Unless the patient is decidedly under weight, an increase is considered distinctly undesirable and fraught with danger. As a general rule, Allen advises that the patient be brought back to a weight 10 or 15 pounds under his normal figure, providing this indicates a fair degree of nutrition. If the patient is obese, he considers it desirable to reduce the weight very decidedly.

Periodical fast-days. If the carbohydrate tolerance is very low, that is, if below 2-3 of an ounce (20 Grams) of carbohydrate, a weekly fast for twenty-four hours is prescribed; while, if the condition is less severe, the patient having a tolerance of 2 ounces (60 Grams) of carbohydrate, a semi-fasting-day is prescribed every seventh day, during which the patient is permitted the 5-percent vegetables only, and in amounts totalling only half the usual carbohydrate ration.

Allen considers these fasting-days of the greatest importance, for two reasons: first, they build up and protect the tolerance, and, second, they serve to bring home to the patient the importance of dietetic care.

Quite recently (*Boston Med. a. Surg. Jour.*, Nov. 11, 1915), Allen has recommended exercise in addition to the dietetic treatment just advised. The forms suggested are: running up and down stairs, jumping the rope, throwing the medicine-ball, and even such games as tennis, provided the patient has established a fair degree of tolerance. When first undertaking exercises, care should be taken that the patient does not suffer from overweariness, nervousness or insomnia as a result. Doctor Allen states that through these exercises "it is hoped that an end may be put to the period of pale, feeble diabetics, dressed in double underwear, while hugging the radiator and growing more neurasthenic all the time."

Physicians who have employed the Allen method of treating diabetics are enthusiastic in its favor. For instance, Friedenwald and Linbaugh, already cited, say:

"We have thus far treated 20 cases according to the Allen plan. Of these, 3 were severe cases, 10 moderately severe, and 7 mild. All were rendered sugar-free in from one to four days, and all have been kept free of sugar, with the exception of one case, in which the patient has not followed the dietary restrictions. In a very few instances in which sugar reappeared, this condition was overcome by a single day's fast. All the patients are in good condition, and are carefully following their dietary regulations."

The patients treated by Allen at the Rockefeller Institute were all of a severe type and for the most part presented very unfavorable prognoses. Of 40 reported, 35 were alive after some months of treatment, and the great majority were in a satisfactory condition. Of those who died, 1 left the hospital for disciplinary reasons; the other 4 were suffering from severe complications, such as advanced cardiac, renal or pulmonary disease, which were alleged to be more truly the cause of death than was the diabetes. As Halsey says, these results not only are satisfactory, but they are astonishingly good, in view of the character of the cases treated.

THE INDICATIONS FOR ACONITE

In an article appearing in the department of Modern Treatment and Preventive Medicine of *The New York Medical Journal* (Jan. 22, 1916, p. 178), A. D. Bush outlines the indications for the use of aconite as follows:

"The main indications for the use of aconite are definite and depend upon a curious physiological condition. With some patients, and under some conditions of acute infection, like that of acute bronchitis, the reaction of the system is almost violent. The temperature of the patient rises rapidly to 104° F. or higher, the heart beats with greatly increased vigor and frequency, there is a full pulse of high tension, a considerable rise in blood pressure, and an acceleration of respiratory activity. So sharp is the attack of the invading organism, and so vigorous the reaction of the system, that for the time being there seems actual danger of nature's overstepping herself and creating mischief through excessive activity. It is in such cases that some external regulating influence seems advisable.

"In such reactions, aconite is the only drug whose pharmacological provings show a true indication. Digitalis slows the heart, to be sure, but it likewise increases its force, besides producing an elevation of arterial tension. Aconite slows the heart rate by centric action, and the resulting output for each unit of time brings about a fall in vascular pressure, somewhat augmented by a probable depressant effect on the vasoconstrictor center. Incidentally there is a centric irritant action on the vagus, resulting in diminished respiration; also a coincident fall in temperature, from an assumed direct action on the thermic center. In this way, the well-designed 'runaway' condition of the circulatory apparatus is reined in and its force is directed more regularly and consistently to the task of expelling the invaders."

All of which is of great interest.

THE UTERINE ACTION OF EMETINE

We learn from an editorial in *The New York Medical Journal* (Jan. 22, p. 173) that the effect of emetine on the uterine muscle is the subject of some comment by Chalmers and Archibald, in a paper published in *The Journal of Tropical Medicine and Hygiene* (July 15, 1915).

The evidence submitted by the authors seems to show that emetine may cause contraction of the uterine muscle, and, so, the warning is given against its too free use during pregnancy and menstruation. It seems that a maximum of 1-2 grain daily is the safe dose during pregnancy. Given during menstruation, it may cause cessation of the flow. While no serious harm may result, it is advisable, if conditions permit, to postpone resort to the emetine until after menstruation has ceased.

EMETINE IN THE TREATMENT OF DYSENTERY

Further testimony to the value of emetine in the treatment of amebic dysentery is supplied by Sir Ronald Ross (until recently consulting physician on tropical diseases to the British Mediterranean Expeditionary forces) in a paper contributed by himself to *The Lancet* of January 1, (p. 1).

In his paper, Ross points out that emetine is now accepted everywhere as the remedy of greatest value in the treatment of dysentery, not indeed, because it is essentially superior to ipecac itself—as formerly used—but because the active principle can be admin-

istered in a form far less troublesome to the patient; moreover, he believes that emetine used hypodermically, brings the remedy more directly into conflict with the amebas imbedded in the floors of intestinal ulcers. Still, the powdered ipecac continues to hold a place in therapy, because of the possibility of its attacking the amebas located on the surface of the mucous membrane lining the intestine. "As an immediately applicable routine treatment," the author adds, "the hypodermic injection of emetine hydrochloride has certainly become a great boon to humanity, for which we owe a debt to Sir Leonard Rogers which cannot ever be repaid."

In discussing the forms of dysentery, Ross points out that the bacillary type prevailed most extensively among the British troops near the Mediterranean and the Red Sea until midsummer of last year. After that, there occurred an epidemic of the amebic type of dysentery, especially during July and August. At that time, Ross was on duty in Alexandria. This epidemic continued until about the end of September, after which, possibly as a result of the large use of emetine in early cases, possibly as a result of the natural decay of the epidemic, the amebas began to become more scarce. During the winter, he was told by men who have done work in Egypt a long time, the amebic dysentery is likely to be supplanted by bacillary dysentery.

Recurring to the treatment of dysentery, Sir Ronald Ross declares that in the bacillary type the sulphates of magnesium and sodium are practically specific, just as emetine is specific in the amebic type. While many believe that emetine is powerless against bacillary dysentery and the saline purgatives are powerless against amebic dysentery, it was the practice of the physicians in the British Egyptian service to employ the emetine in every case of suspicious dysentery, without waiting for a definite diagnosis as to the exact nature of the attack. This order, in his opinion, was absolutely demanded, and, the procedure proved very beneficial; first, because best results are obtained from emetine when it can be given early before there is extensive undermining of the intestinal mucosa; and, second, because there are undoubtedly many cases of dysentery of a mixed type, that is, both bacillary and amebic. Between 10 and 20 percent of the patients in which the emetine was employed were not cured; that is to say, they either died or the disease gradually merged into a chronic form. Most of these cases occurred in

patients who had not received the emetine early in the course of the disease and in whom, therefore, the mucosa was probably destroyed over a large surface before treatment was begun.

As a rule, emetine hydrochloride was given hypodermically in doses of 1 grain a day, either in one injection or in two doses, of 1·2 grain each, morning and evening. This treatment is usually continued for from three to five days, according to the custom of the different hospitals, followed by an intermission of three to five days, during which the injections were dropped. Other practitioners preferred to continue the emetine daily for some weeks, without intermission.

In one hospital, three patients died of dysentery, no other obvious cause being observable, and some suspicion was aroused that these deaths may have been due to heart failure resulting from a cumulative action of the alkaloid. However, after a careful examination of these cases, Ross is inclined to believe that evidence to support this position is unsound. However, the practice has gradually crystallized into the formula that, unless there is strong reason to the contrary, the emetine should be re-committed for a time after about ten days of continuous administration.

SERUM-SICKNESS FOLLOWING DIPHTHERIA-ANTITOXIN INJECTIONS

With a view to ascertaining the frequency and severity of serum reactions following injections of diphtheria-antitoxin, 500 patients treated with this remedy in the Louisa Minthorn Hospital, New York, were selected for observation by Dr. Mills Sturtevant (*Arch. of Intern. Med.*, Jan. 15, p. 176). The antitoxin employed was the concentrated preparation prepared by the New York Department of Health. A skin-rash was taken as a determining factor, although other symptoms of some importance occurred in various cases, including malaise, nausea, headache, pains in the muscles, slight rise of temperature, and the like.

Of the 500 cases reported, 422 received antitoxin only once, while 78 received two or more injections. Of the 422 receiving one injection, 84, or 20 percent, showed symptoms; the percentage being considerable higher in those given two or more doses. The frequency of the reaction increased with the amount of serum given. The rashes, were of the urticarial type, in 63 out of the 84 cases, the remaining 21 being erythematous.

Of the 63 urticarial rashes, 43 were severe and general in distribution, the other 20 were mild and limited. The severity of the urticaria seems to be proportionate to the quantity of serum injected. In 16 of the patients, nausea and vomiting supervened, 4 had some edema, 25 showed some rise in temperature, and 13 experienced pains in the joints.

Doctor Sturtevant's summary, based upon his analysis of these 500 cases, is as follows:

1. A varying proportion of patients receiving modified horse-serum react by developing a rash and various other symptoms. The larger the amount of serum, the larger the proportion of subjects reacting.

2. Most patients react somewhere between the fifth and ninth day, although the reaction may occur as early as the first and as late as the seventeenth day, perhaps even later. The time of reaction has no relation to the dosage.

3. The rash may be erythematous or urticarial. The larger the dose, the greater is the proportion of urticarial rashes. Vesicular urticaria is sometimes, though rarely, seen.

4. Nausea and vomiting occur in about 1 out of 5 of the reacting patients, and they are more likely to occur, and to be more severe and prolonged, if the dose of serum is proportionately large.

5. Albuminuria and edema occur occasionally, either together or independently.

6. Joint symptoms are observed in about 14 percent of reacting cases, and may be severe.

7. When administering a given amount of serum in two or more doses, the reaction does not seem less likely to occur than if given in one injection.

TETANUS IN THE GREAT WAR

According to A. T. MacConkey (*British Med. Jour.*, Dec. 11, 1915, p. 819), tetanus has been a good deal more frequent during the present war than in previous contests. He has collected statistics showing that, in the Crimean War, the cases of tetanus among the wounded numbered 0.15 percent; in the American Civil War, 0.2 percent; in the Russo-Turkish War, 0.12 percent; while during the present war it has reached the high point of 0.65 percent.

Tetanus antitoxin is being very extensively used, to prevent the disease, and war experience has confirmed the pre-war conclusion that from 500 to 1000 United States tetanus-antitoxin units is a sufficient prophylactic dose for the majority of injuries, provided

it is given early. In severe wounds, it is advisable to repeat this dose once or twice at intervals of a week.

RESUSCITATION FROM GAS ASPHYXIA, USING RED BLOOD-CELLS

Considerable newspaper publicity has been given during the last few weeks to a method of resuscitating victims of illuminating-gas asphyxia devised by Dr. W. H. Burmeister, of Chicago, who gives his method and a record of the animal experimentation upon which it is based in *The Journal of the American Medical Association* (Jan. 15, p. 164). This new method is based upon an effort to restore to the blood a vehicle that has the oxygen-carrying power of the normal hemoglobin—the latter being destroyed or impaired by the carbon monoxide of the gas.

The oxygen-carrier provided consists of carefully collected and preserved erythrocytes, or red blood-cells. Its value was determined by a series of experiments made with rabbits and dogs, and the blood-cells were obtained by bleeding the animals from the femoral artery directly into a sterile flask containing sodium-citrate solution in water; the sodium citrate being used to prevent coagulation. This was obtained in the following way:

This blood was received directly into a sterile flask which contained 25 Cc. of a 10-percent sodium-citrate solution in water. The blood was allowed to flow in until the flask contained 250 Cc. of blood-citrate mixture. To this, was then added 250 Cc. of sterile Ringer's solution containing 2.5 percent of dextrose. After gently mixing the contents by oscillating, the flask was placed in the dark at + 4 C. until the time of its transfusion. The bottle and its contents were centrifuged just before transfusion and the supernatant fluid, together with the layer of white corpuscles, was removed. This left, usually, 125 to 150 Cc. of a rather thick erythrocyte suspension. In this manner, dogs' corpuscles were kept three or four weeks, without any gross or microscopic evidence of deterioration being evident.

We shall not attempt to give the complete details of Doctor Burmeister's experiments, but he showed that dogs which had been exposed in closed compartments to gas-fumes for 60 to 90 minutes, or until respiration had ceased and in some instances the heart stopped beating, could be revived with this treatment. Immediately upon removal from this chamber, the heart's action was started again (if it had

already stopped) by thoracic massage. If it could not be made to beat again, it was useless to proceed further.

Meanwhile, artificial inflation and deflation of the lungs was practiced, and the external jugular vein was laid bare with a small incision and a small glass cannula introduced, this being equipped with a rubber tube attachment which could be fitted to a large Luer syringe. The erythrocyte suspension already described, previously warmed to 37° C. and fortified by the addition of one Cc. of a 1 : 1000 epinephrin solution, was now injected into the carotid; about 100 Cc. of blood being allowed to flow from an incision in the vein peripheral to the point of injection.

Fifteen dogs, in which the transfusion was begun before the heart had ceased to pulsate lived. Five control-dogs, in which it was possible to secure return of cardiac and respiratory activity, died within two to four minutes after temporary resuscitation, while four other control-animals, injected intravenously with Ringer's dextrose-solution and epinephrin instead of the erythrocyte mixture, died within from three to five minutes.

Doctor Burmeister is convinced of the value of this method of resuscitation and advises the establishment of emergency stations where human erythrocytes are available for injection, just as pulmotor-stations are now maintained. In view of the large number of lives sacrificed every year through illuminating-gas asphyxia, the suggestion has much to commend it.

QUININE AS AN ANTISEPTIC IN BATTLE WOUNDS

Dr. Kenneth Taylor, of the American Ambulance at Neuilly, Paris, reports to *The British Medical Journal*, December 25, 1915 (p. 923), his experience with quinine-hydrochloride solution as a dressing for infected wounds. The advantages claimed for this alkaloidal salt are, that quinine hydrochloride has very high bactericidal properties *in vitro*, especially marked in the case of the bacillus aerogenes capsulatus (the cause of gas-gangrene), against which it is ten times more effective than carbolic acid. When used, it reduced the mortality from experimental gangrene in guinea-pigs, from 100 to 41 percent.

Furthermore, this quinine salt has a strong antifermen action *in vitro*, preventing the digestion of proteins, and the consequent production of a medium favorable for bacterial growth; also, its activity is not greatly

reduced in the presence of serum or pus, it is practically nonirritating when applied in effective concentration to exposed tissues; it is nontoxic when used in adequate dosage; its cost is not prohibitive; and it presents no difficulties of preparation and does not alter its composition on standing.

When used clinically, a 1-percent quinine-hydrochloride solution is used as a wet dressing or for instillation. In some 12 cases, it was used in a 1-10-percent solution (with the addition of 1-10 percent of hydrochloric acid or 1 percent of alcohol) as a continuous drip.

About 125 cases of infected wounds were treated in the American Ambulance with one of these solutions, the majority being fresh wounds, and the patients usually being received at the hospital within forty-eight hours after injury. Many of these patients were infected with the gas-bacillus, staphylococci, and streptococci, the usual flora of putrefactive bacteria being also present in all. About half of them had open fractures of long bones of the arms or legs. Doctor Taylor says that most of the cases treated with the quinine solution have run very favorable courses.

SCARLET-FEVER IN THE FRENCH ARMY

The Paris correspondent of *The Lancet* (Jan. 15, p. 149) writes that scarlet-fever is one of the infectious diseases that has claimed a considerable number of victims in France during the present campaign. Professor Chantemesse has laid before the French Academy of Medicine the excellent results obtained by the employment of methods based on those recommended by Milne. The throats of scarlet-fever patients were painted with a 10-percent carbolized oil, at 3-hour intervals, day and night for the first forty-eight hours, and then twice a day for another week. For children, the strength of the oil was reduced. At the same time, the whole body was rubbed with the eucalyptus-oil, as so strongly advised by Milne.

The eucalyptus-oil treatment has been referred to from time to time in CLINICAL MEDICINE. Employed in association with saturation with calcium sulphide, careful attention to the alimentary canal, and control of temperature by means of small doses of aconitine, properly guarded, this measure undoubtedly possesses many advantages.

By treating the throat with the carbolized oil, there is no doubt that the spread of the disease can be limited, since it is now generally

recognized that scarlet-fever is transmitted mainly by the secretions of the nose and throat.

"GERMAN" MEASLES

The horrors of war have been added to by another wordy controversy in English medical journals. Correspondents of *The Lancet* and of *The British Medical Journal* are urging the dropping of the specific term "German" in connection with measles, as a designation for rubella! However, one ingenious correspondent endeavors to justify the use of the adjective "German," by explaining that "germaine" is the word that properly should be used; the assumption being that German measles is "germaine to" ordinary measles. It is to laugh!

It has been a long time since anyone has contributed anything to CLINICAL MEDICINE "germaine" to German measles. Who will volunteer for the next step?

HEXAMETHYLENAMINE TREATMENT OF INFANTILE PARALYSIS

In his very fine paper upon infantile paralysis—a paper in which special attention is paid to the operation of tendon transplantation—R. Tunstall Taylor (*N. Y. Med. Jour.*, Jan. 29, p. 193) properly emphasizes the importance of early treatment of the febrile stage, in order to forestall or limit the later occurring paralytic symptoms. Among other things, he advocates alkaline antiseptic sprays for the nose and pharynx; thorough elimination with calomel, castor-oil, and enemata; hot wet-packs, to stimulate the action of the skin; free drinking of water, to encourage urinary elimination; proctoclysis by means of the Murphy method, to promote the same end; cold compresses or ice-caps to the head; counterirritation over the spine with tincture of iodine or mustard; and, finally, the internal administration of hexamethylenamine in doses of 1 to 2 grains every two hours, for the first three days, as first recommended by Cushing and Crowe, of Baltimore. While the value of the latter remedy is somewhat questionable, there is sufficient evidence to warrant its routine use, although Fraser and Anderson seem to doubt its utility.

On theoretic grounds, hexamethylenamine should be serviceable if given at the initial stage of infantile paralysis. The difficulty is, to determine the nature of the disease sufficiently early, since the onset is sudden and its character rarely recognized until

paralysis is established. However, in doubtful cases, the drug should certainly be given a trial.

May we venture to suggest another remedy? We refer to calcium sulphide. Older readers of CLINICAL MEDICINE will remember the fine paper upon this subject contributed by Southwick to our June, 1913, issue, page 482. He used calcium sulphide both as a curative and a prophylactic agent, with most excellent results. When infantile paralysis is even feebly epidemic in a community, saturation with calcium sulphide, and possibly the conjoint use of hexamethylenamine in moderate doses, is certainly worthy of trial.

THE EFFECT OF THE PROLONGED USE OF PITUITARY EXTRACT

The only effect from the prolonged use of pituitary extract, taken by mouth, was found to be, J. H. Musser (*Nouv. Reméd.*; cf. *Ther. Mouatsh.*, 1915, p. 219), to consist in a moderate influence upon the peripheral blood-vessels; this action persisting for a certain time after omission of the medication.

DEATHS FROM WILD ANIMALS AND SNAKES IN INDIA

We learn from a recent number of *The Lancet* (Jan. 15, p. 141) that 1745 persons were killed by wild animals in British India during the last year, this being an increase of 9 percent over the previous year. Tigers were responsible for the taking of 646 lives, one man-eater alone having caused 289 deaths in a single district.

The number of lives lost by snakebite amounted to 22,894, an increase of 1124 over the figures of the previous year. Here, the echis viper was the greatest source of danger, and special measures to exterminate this reptile have been adopted.

POSSIBLE EARLY SIGN OF LEUKEMIA:

In a case of severe pyemic infection, H. Pribram observed (*Deut. Arch. f. Klin. Med.*, cf. *Wien. Med. Woch.*, No. 9, col. 436), as a short transient feature, a blood-picture entirely like that exhibited in myeloid leukemia. It is conceivable, Pribram conjectures, that conditions of this kind represent the initial stages of a leukemia, when a predisposition to hemic disorders obtains. If so, this fact might prove of value in studying leukemia in its earliest stage.

Miscellaneous Articles

Current Comment By a Country Doctor

THE Rising Sun of Surgery.—The practitioner who can glance up and read upon his bit of "wall-paper"—by now getting a bit brown with age—that he is qualified to practice medicine in *all its branches*, including surgery, can no longer really consider himself a "surgeon;" not unless he has specialized in that branch. Even if he has done quite a bit in that line of work, such as repairing traumas to the extent of saving divers lacerated digits and limbs and, perhaps, occasionally making an impromptu armed descent upon the abdomen—taking out, say, enough gut to make a fair-sized sausage, with a classic V-shaped accompaniment of mesentery, and then becoming tensely occupied with a Murphy button or, if one be not available, uniting ends with a Lambert suture—one no longer can consider himself a surgeon, in the present acceptance of the term.

The up-to-date surgeon has technical skill in anatomical and pathological manipulation that places him in a class all by himself. There is no "going right down to the peritoneum and then being mighty careful" in the today surgeon's work. This is admitted by said up-to-date chirurgeon himself, also cheerfully and admiringly by others. And not one word of criticism of the surgeon is here intended; not even the hackneyed howl anent supposedly needless surgery is here reiterated. However, wth all admiration for the rising sun of transcendent surgical proficiency, a few predictions as to the future of surgery will be hazarded.

The coming world, I am convinced, will see curative and preventive medicine so developed that eventually there will be relatively little need of surgery, nor danger of a supposititious epidemic of fee-splitting (against which frightful evil this and other sovereign states are now protected by statutory enactment); and, with the disappearance of all but a few representatives of our profession, the surgeon will go first, next the internist, and, lastly, there will remain the Doctor of Preventive Medicine—doctor, ac-

cording to its original meaning—teacher. How?

Mankind soon will be wise enough to stop turning loose the mighty powers of nature in destruction; thus war will pass away.

The pursuits of peace will be rendered free from danger by safeguarding the machinery used in the coming era. Thus shall we eliminate the most fruitful sources of surgical necessity; then will follow "natural causes."

Man is going to breed out the necessity for orthopedic surgery by proper environment and education of the human animal. Lastly, education will largely do away with acquired disease, while the internist will recognize and cure in its incipiency whatever remains. The wrong will be detected in its stage of mere local disturbance of metabolic equilibrium. In other words, because of the increased efficiency of the diagnostician and internist, disease will be nipped in the bud—immediate examination of the sick as well as prophylactic examination of the supposedly healthy being made at stated intervals. In fact, the latter already is a feature of preventive medicine attempted by various life-insurance organizations.

What about the exanthemata, cancer, and so on? Give preventive medicine a bit more chance and sufficient backing, by awakening society, and all these chronic ailments will be chased to where Yellow Yohn and others have gone or are fast going.

Phytolacca. — Poke-root grows along hedges and in waste places throughout the United States, providing the soil be sufficiently rich for their sustenance. Quick-growing and conspicuous, as it is, nature evidently is trying to call attention to its exceeding usefulness to man as an agent alleviative of disease.

Someone has characterized phytolacca as "the vegetable iodide of potassium." With the growing disrepute of KI as a sort of alterative cure-all, and the simultaneous recognition of other, better combinations in

which to introduce into the human system, the useful halogen (calx iodata for one), this comparison is probably a slander on good old poke-root; although, indeed, ash analysis does show the high potassium content of about 4.2 percent.

Phytolacca (now conveniently available in the form of phytolaccoid) is possibly the most generally indicated of all drugs in disorders involving the lymphatic system. Given the hardened and enlarged glands, a pallid mucosa, often showing vivid redness and removal of epithelium in patches, the tongue, while not heavily coated, covered with glary mucilaginous-looking material—and the first thought in the meeting of specific indications will be, to the expert clinician, phytolaccoid. Sometimes, in acute conditions, calx iodata is properly exhibited in alternation with the concentrate.

The most emphatic call for phytolacca is in enlarged cervical and mammary glands, when the use of this drug by inunction will, at times, work almost those "wonders" we so often see written about. Incorporation of the drug with lanolin insures its being carried in, while the required gentle massage accompanying it is not without certain merit. Help from this source can often be obtained in the treatment of early-stage buboes, regardless of their specific origin.

It must always be remembered that the specific action of phytolaccoid is exerted in aiding the lymphatic system and that, especially in chronic diseases showing glandular manifestations, agents calculated to augment leucocytosis and end-product elimination (such as echinacea and irisoid or other drugs of choice), are emphatically called for. Briefly, the phytolacca-thought is always connected with overtaxed glands, whether in acute or chronic conditions. This is a remedy of clear indications, but, like others, will fall into immediate disrepute with any user who expects it to reach beyond those specific signs.

Even in the treatment of glands that have become permanently enlarged, whether of classic neoplastic character or not, many observers claim splendid results. Other glands will certainly be aided, at least in doing the excess work thrown upon them, and the worth of the drug as a remedial adjunct in those forms of goiter not having excessive hypertrophied interstitial tissue is attested by many. A place, in connection with dietetic régime and proper exercise, is also legitimately to be accorded to phytolaccoid in the treatment of obesity.

Phytolacca is rather slow of elimination so that a reasonable degree of caution against cumulative effect—causing delayed emesis and, according to some authorities a depressant effect upon the heart's action—is to be looked out for. However, the reasonable dose is perfectly safe, care being taken to give the remedy at sufficiently long intervals to avoid cumulative effect. It is the writer's custom to prescribe phytolacca, in chronic conditions, three times a day or every three hours. In acute diseases, it may be pushed to effect, giving by mouth, and also in conjunction with inunction over and around the involved glands.

The "Fra's" Last Wish.—The wills of Elbert Hubbard and of his wife both requested that their bodies be cremated. Disposition of the organic remains of this brilliant exponent of individualism and the consummate master of rhetoric became, owing to the exigencies of marine warfare, a matter for piscatorial consideration; still, the making public of his desire will aid the cause of the believers in hygienic and rational disposition of the dead.

Knowing the laws of physics and chemistry, even to the extent that we do, it is difficult to take an affirmative side in the argument against cremation of the dead as a duty to the living. Why argue in favor of slow disintegration of organic matter, when it has ceased to be actuated by the unknown force of personality, and when this change can be quickly made without soil pollution and danger to the living?

We take it that there is no justifiable religious ground for letting putrefaction destroy man's body: if there is, we can as well turn to the complicated discussion of the Zend-Avesta teachings at the time of the corruption of Zoroastrian precepts by magian influence—at which time a line of sophistry was worked out that resulted in Parsee substitution of buzzards and jackals for fire. The only arguments against cremation, other than those based upon precedent and illogical race custom (aside from purely religious dogma) that now come to our mind, hinge upon the difficulties to be placed in the way of future ethnologists and present-day medical students by destroying material for research. The danger of mistakenly using the ashes of one's deceased spouse for tooth-powder, as related by a recent fiction writer, is purely imaginary.

Personally, it makes little difference to us what happens finally to our body. Certainly, none of us can say. There are in existence

the former transitory habitations of rulers of the shepherd-king dynasty that are being studied by archeologists and gazed at by gaping tourists. The skulls of the once mighty are measured by the student of comparative zoology; and it may have happened to the skeleton of some nameless Pharaoh, sepulchred under enough rocks to prevent coyotes from performing the perverted Zoroastrian rights of the Parsee, that a pair of medical students, instead of holding a soliloquy over its cranium, as was done by the tragedy-marked Prince of Denmark over Yorick's, got very busy in trying to locate where within had been the fissure of Rolando—thus utilizing the departed in connection with Gray's "Anatomy," to make up what are now called units, while they were spending their vacation in earning a few needed dollars by desert toil.

It may be that these students were greatly aided in their arduous search for knowledge by the custom of gathering as many rocks as were conveniently available, and time permitted, piling them over a shallow grave, then leaving, after erection of such cross, if any, as available material permitted, the duty to the passerby of crossing himself and adding one more stone to the desolate heap, in certainty of its being done.

Sometimes these students may have speculated as to whether that desert dead had been hero, horse thief or just plain searcher for free-milling ore. For the truth of the story I vouch not and claim not to know a landmark or water-hole from the Spanish Peaks to the mouth of the Yaqui River, and doubtless should take a gila monster on a mesquite-bush for a 108 Bar maverick; but, if true, it is quite possible that the bones, after serving to demonstrate tubercle and foramen, were, not without sentiment, returned to their resting-place to await further disintegration. If this was done, it is to be hoped that the desert dead was reasonable enough not to object to the little matter of lending his bones. If the gentleman was a bandit chief, perhaps he was even glad to offset some of his cussedness in life by promoting knowledge, to aid toward lessening human suffering.

Alcohol and Active-Principle Medication.—Qualified to speak either from the standpoint of physician or pharmacist, I should not have voted for exclusion of spiritus frumenti nor of spiritus vini gallici from the revised U. S. P. These articles still have a limited field of usefulness and are employed by many capable men. Any medicinal substance of recognized use should have a standard of purity; espe-

cially is this true of whisky, which requires an aging process that permits the interaction of certain aldehydic components with the higher fusel-oil alcohols, to form esters essential to the formation of a product suitable for consumption.

However, the use of alcohol in any form in medicine is constantly diminishing. I have no remembrance of having prescribed whisky, brandy or wine for a half-dozen years—and I am not ranked as a prohibitionist, either. The fact simply is, that, having other agents to accomplish the same therapeutic result, it seems illogical to load a diseased system with a substance in quantity that must be oxidized—burned up—at the expense of energy more properly to be conserved. Think of the divers complicated processes that must be undertaken to change $C_2H_5 OH$ to end-products of elimination, at the same time maintaining proper balance of reaction in the body-fluids. The primary stimulating effect (always subject to the law of reaction) is by shock activity, set up through an effort to throw off an irritating molecular combination; and such stimulation can be obtained by other means.

The tendency of modern practice is, to minimize even the amount of alcohol used as a solvent and preservative in the menstrua employed. Use of the active principles has in no small way contributed to the gradual, but certain, decline of the prescribing of alcohol in medicine. The trend toward the use of the indicated remedy in the smallest and most potent available bulk has, perhaps unconsciously, helped much toward the possible final cutting down of the use of alcohol to the sterilizing of the hypodermic syringe. Even for this purpose, however, it should be used carefully. When employing an alcohol-sterilized syringe, be sure to rinse out the instrument with sterilized water before employing it for administration of the animal products put up with physiologic salt solution, especially when giving pituritin.

As a beverage, alcohol is simply being pushed out. It is considered a lessening factor in modern efficiency and as a social institution is looked upon with increasing disfavor. The change in the public opinion anent drinking by the doctor has been so marked in the past very few years that he had best not even drink the new baby's health, after sitting up all night awaiting its arrival. It just will not do as a business proposition, regardless of the possible belief of the physician himself that he can oxidize a bit of booze without harm or even with

direct benefit. Potation is simply a thing of the past, and any benefits to be derived by returning to beliefs of the past are, if any, so negligible as to be unworthy the effort toward replacing Old Man Booze in his former good standing. The old man had a long vogue, extending from fermented cocanut-juice to champagne and blind-tiger corn-trouble potentiality, but his day is about done. This statement is not made by a prohibitionist, if you please, but by an observer of evolutionary progress, one who has never believed in forced prohibition propaganda, so often conducted at the expense of the general issue of educational human progress.

A. L. NOURSE.

Sawyerville, Ala.

ANOTHER HARRISON LAW PROBLEM

Mr. A. B. is a user of morphine. For some thoracic trouble he had several ribs resected on the right side, and has to wear a drainage tube all the time. He is also tuberculous.

He went to two different places for treatment and they tried to cure him of the addiction, but he could not stand the treatment. They gave it up and sent him home, telling him he would have to use a certain amount of morphine, and he is now using 1 1-2 to 2 grains, 3 times daily. When he cuts it down to 2 grains a day his cough starts up and exhausts him. He always calls on me to treat him, and what I want to know is whether I can furnish him the amount of morphine he requires with directions how to take it.

"H."

Indiana.

[Frankly, doctor, I don't know. This whole question is now traversing the dangerous passage between the Scylla of official interpretation on the one hand and the Charybdis of judicial decision on the other. As we understand Treasury Decision 2200, the physician must not prescribe (or presumably dispense) the narcotic drugs "in a quantity more than is apparently necessary to meet the immediate needs of a patient in the ordinary case," the only exceptions being that the physician supplying an addict with an opiate must show "decreasing dosage or reduction of quantity prescribed from time to time," while if the patient is suffering from a chronic or incurable disease, "prescriptions might show an ascending dosage or increased quantity." In which class would you place this patient?

On the other hand, Judge McCall, of the United States District Court, Western District of Tennessee, has ruled (case of United States vs. Friedman) that "there is no limit fixed to the amount of said drugs that a physician may prescribe, nor is there any duty imposed upon him, other than to keep a record of all such drugs dispensed by him, and the name and address of the patient, except those to whom he may personally administer, and that he must preserve the records for a period of two years." This decision may be reviewed by the United States Supreme Court. We have not heard whether it has been appealed or not—but the Government usually appeals when it loses.

Our advice to the doctor would be to supply this patient with (or prescribe for him) the smallest amount of narcotic possible, and make a strenuous effort to cure him. Have another physician see him with you, in consultation, and between you decide on the course best for the man, then follow it faithfully. Keep your records scrupulously, entering in your Record Book the exact reasons why the opiate was provided in any unusually large dosage. Under no circumstances permit yourself to be classed as a "purveyor" of a narcotic for an improper purpose, and never give the opiate to any third party, or intermediary. Finally, do your very best to follow the Commissioner's rulings strictly and to the letter—but be human and humane.—ED.]

HARDSHIPS THE HARRISON LAW MAY BRING

We, here in Michigan, have just received our first visit from the inspector under the Harrison antinarcotic law. No one seemed to understand exactly what to do and what not to do so as to comply with the law as officially interpreted; however, according to the explanations given out by this inspector at these visits, it becomes manifest that every physician is at his mercy—and more so, probably in the rural districts than in the cities. Let me briefly repeat a few of the rulings as explained to us:

Supposing a physician is traveling or is driving out in the country and he is taken sick with cholera morbus, maybe in the middle of the night, while for some reason no other physician can be reached, and under these circumstances this sick doctor should dispense for himself an opiate. In doing this he is violating the law.

Or, if under similar conditions this doctor's horse becomes sick and he knows that an

opiate or some other narcotic will give relief, at least until he can reach home or some place where he can call help, if he gives the drug he violates the law.

Likewise, if he should meet a patron or neighbor on the road stalled with a sick horse, and he provides a narcotic for temporary relief he again violates the law. He may be in a locality where there is no veterinarian within ten miles or more.

I have been practicing medicine since 1871, and it seems strange that physicians should be treated like this, with no honorable standing, and placed at the mercy of an inspector who may be a good sensible man, but also, who may be one who is determined upon hewing straight to the line of the letter of the law, irrespective of sense or justice. He may be swayed by politics or his opinion of different schools may influence him; even personal prejudice may control. Such a law gives such men a splendid opportunity, if they be so inclined, to make a world of trouble.

We who dispense drugs must account for all narcotic drugs. If you should meet with some accident and happen to break any of your narcotic bottles in your case, will the inspector accept your explanation or will he report so much of your stock not accounted for? *You do not know.* A bottle of anesthaine stood on my desk. I was preparing to use some of the anesthetic, when a playful kitten jumped on the case and brushed the bottle off, spilling the entire contents. What will the inspector report?

I appeal to you, readers of CLINICAL MEDICINE, to come forward and point out a way of relief. I realize that the law is good in a great many respects; but, cannot the objectionable features be removed? Someone must be trusted and considered honorable, and do you not think that physicians, as a class, are honorable men? Much more can be said about the great wrongs this law can inflict upon us, as well as upon the sick, but I think I have said enough to show you the points I wish to make. I am hoping you can give us some light.

"R."

Michigan.

[The possibilities of prosecution, or persecution, under the Harrison law presented by our Michigan brother are correctly stated. It is perfectly true that it is illegal for a physician to prescribe or dispense a narcotic drug for himself, even in case of emergency; and he can not legally give such a drug to a sick animal or supply it to a layman for that

purpose, no matter how remote he may be from a registered veterinarian. The writer has a relative who, with his family, is taking up a claim in the woods of northern Minnesota. In case of sickness he is compelled to go or send over thirty miles to a physician—and he has two or three hundred neighbors in the same predicament. Heretofore I have supplied this family with simple remedies for coughs, diarrhea, neuralgia, painful injuries, and other emergencies, but now I may not do this, both because the federal narcotic law forbids and because "poisons" are now ruled to be unmailable by the postmaster general, and also because it is illegal for them to have these pain relievers in their possession.

Of course it is not likely that the officers of the government will make any trouble for a doctor who is going about his business in a proper way. Indeed, Dr. Henry B. Hemenway, who recently rendered a report on the federal narcotic law to the Council of the Chicago Medical Society, stated that he had been assured by those in charge of the enforcement of the law in this city, that they would not make trouble for any reputable physician, their sole aim being to reach the quacks and the crooks. But in a sense that only makes the situation more serious, for it is an admission that it is illegal for a physician to do something that is admitted to be morally right—indeed, a duty; that there is one kind of law for one class of men and another kind for another class; that practically all physicians have been transferred technically to the lawbreaking class; that their transgression may be and will be winked at, if they are in good standing; and that the profession, almost as a whole, is at the mercy of the opinions, whims, personal grudges or prejudices of the secret agents of the government. And this reminds me of a statement I recently heard made, anent the rapidly growing system of government supervision over the lives, habits, and business of our people, that "if all the laws were enforced half of us would be in jail and the rest of us out on bail!"

We believe in the Harrison narcotic law; but we do not believe in extending its application to such a point as to make it inquisitorial, tyrannous, and inhumane. It is tending strongly toward that extreme, if we are to accept the interpretations placed upon it as final. But must they be final? In our opinion the result rests largely with the medical profession. Read the two other letters upon this law which we are printing

in this issue, and then tell us what you think should be done.—ED.]

THE TREATMENT OF NARCOTIC ADDICTS WITHOUT VIOLATING THE LAW

I would appreciate your opinion regarding prescriptions for narcotic drugs given by a country physician. As you well know, the older country physicians used too much morphine for the relief of pain, resulting in the creation of many addicts among the older people. Many have taken the drug for long periods and are still able to get prescriptions from nearly any physician whenever they please. Our physicians have known them for many years and try to induce them to take treatment to effect a cure. Some try, but without avail.

Many of these patients are not in good health, and are also poor, and there are no free institutions in this vicinity to my knowledge. I keep reducing the dose when able, and I think we are all anxious to obey the meaning of the Harrison law, not only on account of the penalty of the law, but for the good of the law and because we appreciate its good intention.

I hope you may be able to offer some suggestions. Must we reduce the dose to keep within the law?

"B"

New Hampshire.

[Inasmuch as our New Hampshire friend's predicament is identical with that experienced by many other physicians—as we know because we have received many letters covering exactly this ground—we endeavored to secure from the Commissioner of Internal Revenue, at Washington, an opinion as to the course to be adopted by physicians called upon to care for narcotic addicts. We accordingly wrote the Commissioner the following letter:

I am enclosing herewith copy of a letter just received from a New Hampshire doctor. I am omitting his name, because presumably the letter was written to me in confidence. However, this is one of quite a number of letters received from men who are experiencing exactly the same difficulty referred to in this communication.

In other words, it is practically impossible in a very large percentage of instances, especially in country practice and particularly among the poor who are compelled to make a living, to show a "decreasing dosage or reduction of the quantity prescribed from time to time" in treating narcotic addicts, as required by T. D. 2200.

For the benefit of the medical profession, some twenty-five thousand of whom we reach through

CLINICAL MEDICINE, I shall appreciate it very much if you will tell me what I shall tell these men.

We received the following reply from the Commissioner's office:

Relying to your letter of January 17th, enclosing a copy of a communication received from a physician enquiring as to the quantity of narcotic drug that may be dispensed or prescribed to patients who are addicted to their use and who live in the country, you are advised that Treasury Decision No. 2200 to which you refer indicates what is expected by the Government; to show the good faith of physicians in disposing of narcotic drugs through prescription or otherwise. As it is practically impossible to effect a cure by placing in the hands of a drug addict an unlimited supply of narcotics, unless a physician reduces the dosage in successive prescriptions, the intents and purposes of the Harrison Narcotic Law would be violated.

There is enclosed for your information a copy of an opinion rendered by a United States District Judge which very accurately defines what is expected of physicians registered under this law.

Respectfully,

L. L. SPEER,
Deputy Commissioner.

The pamphlet sent us by Mr. Speer was a copy of the decision of Judge Sater of the District Court of the United States, Southern District of Ohio, Eastern Division, in the case of Tucker and Robinson vs. Williamson, Collector of Internal Revenue. This decision has to do with the business of two physicians (Tucker and Robinson), licensed as such under the law, who were engaged in the manufacture and mail-order sale of a well-known remedy for the treatment of catarrh, containing a small amount of cocaine, to-wit, Tucker's Catarrh Cure. The whole argument deals with the legitimacy or illegitimacy of mail-order practice, and so far as we can discover, from a careful perusal, it seems to interest the general practitioner only in so far as it deals with the problem of "personal attendance," as defined in the Harrison Narcotic Law. We confess that we are unable to see the slightest analogy between the case of these vendors of a cocaine-containing catarrh remedy, sold to the laity, and that of our New Hampshire friend and the hundreds of other legitimate practitioners who are in a quandary as to what they shall do when called upon to supply the actual needs of unfortunate people who are victims of a narcotic addiction.

We do not wish to be placed in the attitude of criticising Mr. Speer unduly, knowing the difficulties of the position which he holds, but I am sure that any physician who reads Mr. Speer's letter, especially that portion of it referring to the "placing in the hands of a drug addict an unlimited supply of narcotics, unless a physician reduces the dosage in suc-

cessive prescriptions," will agree with the writer that Mr. Speer knows very little about drug addicts and still less about the practice of medicine. Personally, the writer has never met a physician who even suggested, much less advised, the desirability of placing in the hands of a drug addict "an unlimited supply of narcotics."

What doctors want to know is how to provide legitimately for the actual needs of these poor people. They are not criminals, they are not infectious, and they can rarely be cured off hand, by reducing the dosage of the narcotics "in successive prescriptions." In spite of Mr. Speer's letter, we are still seeking light.

In this connection we advise a careful reading of the comment upon the preceding letter, which really deals with the same problem, although from another angle.—ED.]

IT'S ONLY THE GRIP

Anten Dr. Musgrave's comments on "two kinds of colds," in the January CLINICAL MEDICINE, p. 69, Tyson, in his "Practice of Medicine," p. 132, says: "In the epidemic (of grip) of 1893-94, gastric catarrh was frequent, producing nausea and vomiting, and adding greatly to the physical weakness. Severe vomiting may even usher in the attack."

This is in keeping with the instruction given by Doctor Sloan, of Kansas City, who classifies grip under three headings: (1) Catarrhal—respiratory tract; (2) nervous—afflicting any portion of the nervous system; and (3) alimentary.

For a number of years in practice I saw only the first and second classes, and was beginning to doubt there being a third; but the last two or three years, and especially during the present epidemic, I have been thoroughly converted, having seen the "alimentary" form with all its variations.

I have seen so many cases of sore, swollen liver and gallbladder, almost invariably accompanied by slight jaundice, that I can scarcely believe it a coincidence. These cases are usually secondary to or a sequel of the catarrhal form.

I have also seen a number of cases of heart involvement as a sequel, including palpitation, irregularities, and even distinct murmurs, which I can trace directly to an attack of grip, probably as a toxic result.

If people realized the seriousness of this disease, and would consult a physician at once, and follow instructions implicitly, they would escape these end-results, which

are usually out of all proportion to the original trouble.

As dominant treatment, nothing has given me as much satisfaction in the catarrhal forms as calx iodata and calcium sulphide; and I should not consider it malpractice to use these two remedies all through all acute forms.

L. J. COBERLY,

Oakesdale, Wash.

[The alimentary type of grip has been known for many years and has frequently been described. That there is such a disease, clinically speaking, is admitted by everyone. The only open question is as to whether this disease is a true influenza—that is caused by the influenza bacillus—or not. Now that these winter ailments are receiving close bacteriologic study we are learning some strange things. For instance, A. J. Hinkelmann, in an article on "The Bacteriology of the So-Called Intestinal Influenza," (*Illinois Medical Journal*, Nov. 1915) showed that in one epidemic of this disease presenting the typical symptoms, the stools of the patients were well filled with the bacillus of winter cholera, which cultural and animal experiments seemed to show was the cause of the disease in this instance. Whether this microorganism always causes the alimentary type of influenza or not, of course we cannot say. Time will doubtless tell.

One of the most interesting features of the grip epidemic of this winter is the comparatively small part played by the influenza bacillus in its production. In the middle west this organism was certainly a minor factor, but it seems to have had more of an influence in the East—in New York, for instance. Generally speaking, the pneumococci and streptococci have had the stellar roles this season, and this explains the severity of the type and the exceptionally high mortality. The streptococci are probably responsible for the numerous instances of cardiac involvement.

As to treatment, Doctor Coberly strikes the proper note—although we advise resort to bacterin treatment as adjuvant to drug treatment. Given early, a pneumococcus-streptococcus bacterin will modify the course of the disease very decidedly.—ED.]

OBSTETRICAL AIDS

I use H-M-C and pituitrin in every case of obstetrics. If I see the patient early and she

is having an excruciatingly painful dilation of the cervix I give a tablet of the combination by mouth, when usually in a few hours the cervix will be well dilated. Then I give a tablet of H-M-C No. 2 and 1 Cc. of pituitrin together, hypodermically, and in about twenty or thirty minutes, and many times earlier, it is all over with, and just a little whiff of chloroform as the head sweeps the perineum, labor is completed from one end to the other, with little pain comparatively, and the mother goes to sleep and sleeps for several hours.

A bit of advice: To keep a gentle horse from running away, I give a teaspoonful of fluid extract of ergot after the placenta, as pituitrin action does not persist very long.

I. R. FOWLER.

Louisville, Ky.

ARE YOU LOOKING FOR A LOCATION?

Dr. U. G. Vance, La Fontaine, Indiana, writes that he knows of locations for three or four good physicians. If you are interested, write the doctor; be sure, however, to enclose a stamped self-addressed envelope for reply.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The twenty-eighth semiannual meeting of the Medical Society of the Missouri Valley will be held in St. Joseph, Missouri, Thursday and Friday, March 23 and 24. The scientific program will include some twenty-five papers, besides two public orations to be given by men prominent in the profession.

It is believed that this meeting will prove a very attractive one, and a cordial invitation is extended to all physicians residing in nearby states. The March number of *The Medical Herald* will present the full program. If you are interested, write to Dr. Charles Wood Fassett, St. Joseph, Missouri, who is the secretary of the society.

DRUGS AND DRUG-ACTION

I have just been reading the very thoughtful and suggestive editorials in the January number of your excellent journal. How is it possible that you can think out so many good things? You know that I myself once edited a medical journal, but never could I have made a tenth of the pregnant suggestions such as you present month after month. Just now, though, I wish to single out the

article titled "Cardiac Stimulants," which is capital; but so is that on lobelia and its alkaloids.

Both of these articles (as well as many other papers published), all of which show an exhaustive study of drug-action, recall an article, which I wrote nearly twenty years ago, on "the primary and secondary action of drugs," in which I proved that all the drugs that had been carefully studied seem to be capable of exerting opposite actions, according as the dose is large or small. I began by citing this generalization from Stillé's great work, his "Therapeutics and Materia Medica," as follows: "There is also a primary and a secondary operation of medicines; sometimes the one and sometimes the other is curative." Then I drew largely from H. C. Wood's copious material, and finally quoted from Lauder Brunton's elaborate work on pharmacology this pertinent statement: "This opposite action of large and small doses seems to be the basis of truth on which the doctrine of homeopathy is founded;" after which he proceeded to expose some of the fallacies of that system.

Dr. Samuel G. Dixon, the celebrated director of health affairs in Pennsylvania, was temporarily in Atlantic City with his family and one of his children was under my care at the time that article of mine was written. I asked his judgment about publishing it, and he insisted that I send it to Lauder Brunton, in London, for *The Practitioner*, together with a personal letter from him. I did so, and the paper appeared in the April and May numbers of 1888.

Now that the profession is broader and more liberal, so that it is no longer a crime to meet a homeopathic brother in consultation, why should it not be right and entirely allowable for all of us to prescribe the smallest doses that have been shown clearly to be effective? The faults and limitations of the homeopathic system are known to all of us, but sometimes those men effect cures after we have failed; and this fact should set us to thinking. I early discovered, as Ringer also has insisted, that drop-doses of the wine of ipecac are often effective in relieving nausea, and that similar doses of tincture of cimicifuga will frequently prevent threatened abortion. In or near Philadelphia, there is living a young lady today (or was at last accounts), notwithstanding that, when her mother was pregnant with her, the latter was ordered by an experienced physician of Atlantic City to take a drug for the purpose of terminating the pregnancy, because

she had been suffering for several days from pain and uterine bleeding, and, besides, had had a like experience three or four times in previous pregnancies and efforts to prevent an abortion had failed. And her medical adviser had the support, too, of the leading authorities in obstetrics. Nevertheless, when I was consulted, I advised that before doing this she try my plan. I directed that she remain strictly at rest, and prescribed for her tincture of cimicifuga, which I knew had proved helpful in several such cases. She obeyed, and she went to term.

Your missionary work for minute doses of the numerous valuable alkaloids has enabled us to avail ourselves of them and thus save thousands with their help; and, has yet, left us free to rescue other thousands, in what would otherwise have been fatal emergencies, by injecting full stimulating doses of heart stimulants or tonics, and the hemostatics or appropriate vaccines.

BOARDMAN REED.

Alhambra, Calif.

[Praise from Boardman Reed is praise indeed.—Ed.]

SOME POINTERS LEARNED DURING TWENTY YEARS OF PRACTICE

When a little powdered iodoform is placed upon the root of the patient's tongue and there allowed to dissolve slowly, it will relieve the worst attack of difficult (asthmatic) breathing, irrespective of the cause of the disease. The relief occurs in a very short time, generally within five to fifteen minutes, and will last from one to six hours, when the medication may be repeated. In one instance, the relief was found to be not as marked as usual, but here the asthma was due to a serious organic heart lesion from which the patient died two days later.

For a calomel cleanout, give from 2 to 5 grains in 6 to 8 divided doses, tablets or granules, every third day, late in the evening, following with a full dose of sulphate of magnesium early next morning. During the intervening days, a saline laxative should be given in full medicinal doses night and morning. This course will cure sciatic neuralgia when many other plans have failed. In one case, I had used all the famed remedies—salicylates, blisters, electricity, rhus, and many others—over a period of two months. The plan described cured in less than ten days.

In diphtheria, especially in severe cases and while one is waiting for antitoxin to

arrive, give pilocarpine hydrochloride. I saw mention of this in *American Medicine* many years ago and I used it very successfully before the antitoxin came into use. The pilocarpine should be given hypodermically in doses ranging from 1-48 to 1-24 grain, according to the age of the patient and severity of the attack, repeating every ten or twelve hours, unless the symptoms abate. Of course, one must not neglect antiseptic local treatment, to stop absorption of toxins from this source.

In this connection, I want to call attention to the value of gelsemium as a remedy for paralysis, either local or general, following diphtheria. A reliable preparation of the drug should be secured. Gelseminine hydrobromide, 1-250 grain, given every two hours, for a child 6 or 8 years old, will meet the indications.

To relieve neuralgic pains in any part of the body, as well as pains due to various causes, try the local use of guaiacol. For facial neuralgia, rub in 5 to 10 drops over the site of the pain; you will be surprised to see how quickly it disappears. The same drug will often remove muscular pains of a rheumatic nature. In fact, I believe that, provided any given pain can be relieved by local applications, guaiacol will do this, no matter what the cause. I have used it with good effect in toothache and earache, applying it to side of face and the temple. Pain and tenderness over the area of the ovaries can be relieved in the same way.

To render black hairs on a woman's face translucent and, thus, less noticeable, they should be treated with peroxide of hydrogen. The solution should be diluted with an equal volume of water when beginning the treatment and then the strength gradually increased as the treatment proceeds. You often meet young ladies whose upper lips are covered with fine dark hair which makes them rather conspicuous and causes them much worry. It would almost be an impossibility to remove these hairs by means of electrolysis, and this should not be thought of when the foregoing simple treatment can be applied. The remedy should be used freely and often. This remedy exerts a retarding influence upon the growth of these superfluous hairs, and many of them fall out if it is applied perseveringly.

To abort or to break up a cold, I know of no remedy so valuable as potassium dichromate. It is well borne by the aged and weak persons. It may be administered at any stage of the attack and will demonstrate

its curative powers. When fever is present give aconitine in conjunction with it, each seemingly enhancing the action of the other. Potassium dichromate is especially indicated in grip and tonsillitis, when the throat and tonsils appear raw and angry. The same is true for croup and capillary bronchitis. In treating a cold or grip, if the remedy is pushed and other essential things are done—not neglecting the "clean-up"—you will not have to wrestle with prolonged prostration or drawn-out recovery.

About one year ago, I accidentally discovered that sulphide of calcium acts very decidedly as an anaphrodisiac. It was being administered to a young man who was suffering from pustular acne. He was also suffering from a rundown condition, which he said was due to frequent nightly emissions. It was not long before his condition was very much improved. One day I mentioned that his general condition had improved also, and he said it was no wonder, for he had not had a bad dream for weeks. From this time I began to prescribe it for this and allied conditions, and my notes show that every patient was benefited. The calcium sulphide subdues the erotic craving, and also weakens the erectile power, and, therefore, is beneficial in chordee when associated with gonorrhea, and is especially beneficial for boys who masturbate. How this therapeutic effect is brought about, I do not attempt to conjecture, because the drug is certainly an alterative and tonic, and patients are built up under its influence.

While I am speaking of calcium sulphide, I want to call attention to its value in dysentery, especially when combined with Dover's powder. Ordinarily 1 grain of the sulphide should be combined with 4 grains of Dover's powder for one dose. This amount should be given every three hours until the blood and mucus begin to disappear rapidly from the dejecta and the straining is greatly relieved; then give a dose three or four times a day, as indicated.

The foregoing combination is good treatment in all forms of gastroenteric troubles where looseness of the bowels and pain are prominent symptoms. Patients so treated not only recover rapidly, but complications are comparatively rare.

Here are some indications for ergot other than those in which it is generally prescribed. According to my experience, we have in the drug one of our best tonics for the entire arterial and capillary system, in all passive or sluggish conditions. It should always be combined with the indicated heart tonic in

the very beginning of those diseases that engorge the circulation.

The indication for ergot is exactly opposite to that for the use of the bromides. The latter are indicated where there are a fast circulation, excitement, and an excess of nervous energy; patients are restless, talkative, and can not keep quiet. In the condition calling for ergot, the patient may suffer, but is benumbed and overcome. The circulatory system is deranged, the portal circulation is overcrowded, the organs become more and more crowded with blood (which is poorly oxygenated), their functions are more and more deranged, until the whole system is suffering from autotoxemia; and a tedious convalescence is the result.

Ergot will be found a remedy of precision in capillary bronchitis, pneumonia, malaria, grip, continued fevers, congestion of the pelvic organs, and in all conditions with the above indications. Small doses of ergot will also relieve the headache of flabby-tissued persons. The brain is congested in many of the diseased conditions enumerated above, and ergot restores the arterial tone there as well as elsewhere. Under the influence of ergot, the cells of that organ are no longer inundated and paralyzed by excess of blood: the circulation being restored, the brain is able to shake off lethargy and torpor, and can then assume command of the body-forces.

C. W. CANAN.

Orkney Springs, Va.

BLOODY DIARRHEA AND TYPHOID FEVER

Case 1. A woman past 50 years had been constipated from youth until after she was 25 years of age, when periodical diarrhea came on, which continued for fifteen years. Every one to three weeks a profuse diarrhea would set in and continue for several days, whatever the treatment; the passages consisting of a profuse yellowish liquid. Ten years ago, she fell into my hands, and I placed her on an antiseptic and tonic course, whereupon the spells were greatly lessened and her general health improved, until after the climacteric three or four years ago, when they again became worse—more frequent and bloody, even fresh blood (about an ounce) at times being voided after stools.

Last fall—September 25 to 28—I gave her three hypodermic injections of emetine hydrochloride and she has not passed any blood since. However, on November 2, she had a serious attack of watery diarrhea,

followed by cramps in the legs and arms so severe that I had to give her H-M-C and strychnine injections to control them. There occurred a large number of passages of watery feces—but not any blood—something that had not happened before for years. Here certainly there was a pronounced victory for emetine in preventing bleeding. This is not dysentery, but ulceration of the colon.

Case 2. A boy 15 years of age was taken with typhoid fever on September 29, his temperature continuing to range between 103° and 104° F. until the 26th of October, when it gradually fell, until til the 16th of November, when it reached 97 degrees. The morning and evening temperature seldom varied more than 1 degree. A positive Widal reaction was secured on October 10. This was the most uniform, highest and longest persisting temperature I ever saw.

The patient had a clean tongue and flat belly the whole time. He was deaf during most of October and November; he was delirious and picked the bed clothes for a week, from November 15 to 23, but recovered under a course of the sulphocarbolates and echinacea. I have found that echinacea will prevent a dry, cracked, sordes-covered tongue. Get that last idea before your readers.

THOS. W. MUSGROVE,

Sultan, Wash.

[Thanks for "that last idea," doctor, and for all the suggestions contained in your letter.—ED.]

EMETINE IN EPISTAXIS

At 11 a. m. December 11, last, I was called to see Mrs. Wesley, colored, age 76. She had bled profusely, but the hemorrhage had ceased before my arrival. Was called again at 9:30 p. m. the same day, and the hemorrhage was so free that I plugged the anterior nares; which checked it at once. I then gave 1 grain of emetine, hypodermically. No more hemorrhage occurred until December 12, at 8 p. m. I then gave another similar dose of emetine. The patient was icy cold and the arterial circulation very feeble, so, I combined 1-4 grain of morphine sulphate and 1-150 grain of atropine sulphate with the emetine, giving all at one dose (hypodermically). This treatment, or nature or something else checked the hemorrhage, after I had plugged the anterior and posterior nares. I then put the patient on 1-100-grain doses of atropine sulphate, internally, every three

hours, and by 7:30 p. m. there had been no return of the hemorrhage.

This report is incomplete and of no value, but I reported it to the Mississippi County Medical Society on December 13, and they suggested adrenalin locally, together with packing the entire nares with gauze, bismuth subnitrate to be incorporated into the gauze.

Packing the posterior nares (with poor light and ignorant assistants) is not the funniest thing I ever did, especially if you are satisfied that a funeral is at hand if you do not hurry up.

In a long series of mean cases, I do not know of anything more trying than watching a patient's life go out through hemorrhage. Fortunately, I have not met this kind of case. Luckily, or by some providential intervention, my cases of hemorrhage have never succumbed (to hemorrhage alone), and only one case through traumatism, incident to forceps delivery. I reported this latter case and was ripped up the back by critics.

Describing the best way to check hemorrhage from the nose, uterus, and lungs would help some poor doctor out of a peck of trouble, especially if given correctly by someone who knows how. (Don't all write at once!)

W. P. HOWLE.

Charleston, Mo.

EMETINE IN HEMOPTYSIS IN CHEST WOUNDS

The New York Medical Journal gives an excellent abstract of an article by Dupont and Troisier in *Bulletins et memoires de la Societe medicale des hopitaux de Paris*, November 27, 1914, who report three cases of penetrating rifle-bullet wounds of the thorax, followed by hemoptysis, in which emetine was used with results apparently as satisfactory as those already reported by other observers when this drug was used in the treatment of tuberculous pulmonary hemorrhage.

In the first case, with a wound at the base of the left lung, arterial blood was being abundantly expectorated upon admission, and the man was dyspneic and oppressed, and presented signs of a slight hemothorax. The condition persisting throughout the night in spite of the dressing applied, a subcutaneous injection of 2-3 grain of emetine hydrochloride was given. In the afternoon the bloody expectoration showed marked reduction, and in the succeeding night ceased almost completely. A week later, the patient was discharged in excellent condition.

In a second similar case, a single injection

of emetine was also followed in a few hours by cessation of bloody expectoration.

In the third case, that of a man wounded a week before, bloody expectoration had been continuous, and auscultation revealed a tendency to consolidation of the lower portions of the lungs, with crepitant rales. After an initial injection, the bloody sputa were reduced from fifty a day to ten, and after the second, entirely disappeared.

The authors would not hesitate, in severe cases, to administer initial doses of 1-4 or even 1 1-2 grains of emetine. That the benefit afforded by the drug is permanent was shown in that, after the period of improvement following injections, a return of hemorrhage through secondary vasodilatation did not occur in any instance.

THE HARRISON ANTINARCOTIC LAW— IMPORTANT

Several months ago, Treasury Decision 224, requiring physicians and others ordering narcotic compounds to designate on their official order the quantity of narcotic contained in each tablet or pill, or fluid or avoirdupois ounce, was (as our readers know) temporarily suspended by the government. At the time, we advised all our readers to conform to this ruling, pending final decision. The wisdom of this advice has been shown by the final decision of the government to enforce this ruling, beginning on May 1. Thereafter every physician ordering any narcotic mixture or compound *must* designate on his order blank the quantity of the narcotic contained in each tablet or ounce of the mixture. Do not forget this. We advise immediate compliance with the regulation, so as to get the habit of making those orders correctly, and to avoid subsequent delays.

EMETINE TREATMENT OF TYPHOID FEVER

I am especially interested in the treatment of typhoid fever with emetine, which I have used with success in two cases. I gave 1-2 grain night and morning for five days, or in all ten doses, when the temperature came down from 104° F. to normal and remained so until convalescence was complete. That is the best I have ever seen done in forty years' practice. If anyone thinks it won't work, try it. Begin early.

Let the good work go on.

H. H. SMITH.

Lexington, Ohio

[We have received from Doctor Frazier, who first advocated the emetine treatment of typhoid fever—in *The Medical Record*—a very interesting article upon this subject. We hope to print this paper next month.—ED.]

KEEP FRIENDS WITH THE MIDWIFE

At the request of my friend Dr. Geo. C. Howard, president of the Monongahela Valley Dental Society, I submit the following experience of mine with midwives—or, as they are called among the lay folk, granny-women—and with it the photographs of two prominent ladies of “auld lang syne.” The larger one of the two, on the right, is Aunt Betty Wiles, who was present at the birth of Doctor Howard's father, sixty-one years ago. The other, Mrs. Emina Cool, was also prominent in her day.



Two Old-Time Midwives

I will not attempt to report all of my associations with the old ladies, as it would occupy too much space, but will speak only of Aunt Susan W., whose home is in Monongahela County. By permission, I will also venture to give what I consider some wholesome advice to all practicing physicians, both young and old, relative to their treatment of these old granny-women, should they ever be thrown into association with any of them.

In the first place, let me say, do not treat the midwife with contempt or criticize her in any manner, but, rather, meet her with a kindly smile and a hand shake; make her believe that you have confidence in her, whether you really have or not. It will be good round dollars in your pocket. For, I assure you, every granny-woman in the land has hosts of friends who believe in her and will not hesitate one moment to take up the cudgel in her behalf. Now to my story:

Some forty years ago, I located, for the practice of my profession, at a small village in upper Monongahela County, West Virginia. The hamlet consisted of a hewn-log church, school house, store, smithy, corn-mill, and about eight or ten dwellings. The inhabitants (as a rule) were rough old-time folk, and without of a generous and very sociable disposition; and certainly I never suspected that anyone would think of opposing my starting practice in the place. However, I soon found out differently.

One old gentleman in particular, Uncle Billy V., and Aunt Susan W., the midwife, were the hardest propositions I had to contend with. Uncle Billy said: "Begad, it will never do for a doctor to come here. Just look, there hasn't been any sickness here for a long time, and now, if this infernal doctor comes, it will be no time afore we'll all be down sick." Right here I will say, though, that in the end Uncle Billy became one of my best friends, after having rendered him a favor that helped to save him considerable money.

My other opponent, Aunt Susan W., sallied forth and tongue-lashed me wonderfully. I made up my mind to pay no attention to her attacks and to treat her with respect, speak to her when I met her, and for the rest bide my time; for, I was confident that the opportunity would appear when I could lift Aunty from off her high pedestal and let her down to the sphere of ordinary mortals.

Sure enough, ere long the psychical moment presented itself—and it was thuswise. One very dark and murky night, sometime after midnight, there was a rap at my door, and, dressing hurriedly I there found a messenger, who implored: "Doctor, for God's sake, come quick to David A., on Days Run; his wife is near to death." The woman, he told me, was in the throes of childbirth, but was making no headway. Aunt Susan W., he continued, had been there for two days, and was up a stump. She had them send for Doctor S., up near the Pennsylvania line, but, when he came the evening before, he was "as

drunk as a biled owl," "and he is now lying under the bed, with his feet sticking out from under it."

I hurriedly got out my horse and followed the messenger. When we arrived, I found pandemonium, with the house full of women and Aunt Susan with an I-wish-to-gosh-almighty—that-I hadn't-come-here expression on her countenance.

After taking in the situation, I spoke kindly to Aunt Susan and asked what seemed to be wrong, and her answer was: "Go, see for yourself; I think it is either a leg or an arm hanging out, I am not sure which." I saw that something had to be done quickly; so I prepared myself, made an examination, and found the child's left arm protruding, the cord prolapsed, and absence of pulsation. I then told the husband and the others of the mob that the child was dead.

Proceeding to complete delivery, I asked for some hot water, clean towels, "and you, Aunt S.," I said, "I want to help me at this job." Then, as a precaution I loaded my hypodermic syringe with 30 drops of fluid extract of ergot. Having made all preparations, I drew forth a small vial of chloroform.

And then panic came—every blessed woman left the room, and Aunt Susan was about to vanoose, too. However, I managed to coax her to stay. Then I showed the husband how to administer the chloroform, after the woman had come partly under its influence.

Now I just went after those feet, and had no difficulty in bringing them down at once. I do not think it took me more than eight minutes to deliver the child, all parts being well relaxed. There being no uterine contraction, I injected some of the ergot under the skin of her abdomen, and it wasn't long before contractions set in and the membranes were expelled entire. The runaway women then all come back, and Aunt S.'s star of glory had started on its downward course toward the horizon. However, I made a few remarks to the gaping assemblage of neighbors, and told them that, unfortunately, the books which Aunt Susan had studied did not describe this particular kind of childbirth labor. You can rest assured that this speech in her behalf pleased Aunty wonderfully and this made her a lifelong friend of mine. Afterwards I privately sent her cases, when advisable; for, my obstetrical practice after this took a marvelous jump.

The case of Mrs. A., terminated favorably, and I had the pleasure of attending her in confinement two years subsequent to this

trouble. Her husband was highly pleased, and he remarked that he wished now that he had employed me in the other case in the very start of her labor.

Do not ignore the old granny-women.

As to the alkaloids, I will state here that I almost swear by them and that, if any physician will prescribe them and use them as they should be used, he will get results. I am growing old and soon shall be obliged to retire from active work, but always I shall proclaim: Success to the alkaloidal preparations.

W. L. McLANE.

West Union, W. Va.

"NONSURGICAL" TREATMENT OF CANCER

There can be little doubt about the correctness of many claims that certain forms of external cancer have been cured by methods said to be "non-surgical" but that were immediately and effectively destructive. To distinguish these methods from mere powowing I have pointed out that they are themselves really surgical, though not the kind of surgery that the crusaders too often mean—excision with the knife. I emphasized in my paper the particular reason why attempts at excision are unwise in this variety of fiercely growing cells. This reason may be restated as follows: The victim of any form of cancer is undeniably a good soil for that form of malignant cell or organism and peculiarly susceptible to its reimplantation, whether this be accidentally done by the surgeon at the operation or occurs in the natural way by erosion of a vein or lymphatic vessel and the vascular transport of the graft. The knife is therefore contraindicated in cancer *unless the cancer can be removed without being wounded.*

The quacks, with their caustics and plasters, avoided this danger of operative reinfection (though not the certainty of an irritative recrudescence of remaining parts of the growth that they failed to kill) for the caustics killed the infected cells in their habitat more or less thoroughly. No doubt many small epitheliomas have been successfully destroyed by them. The weakness of the method was its slowness, painfulness, and particularly its lack of directibility, by which all edges of larger growths could be surely destroyed, for these caustics are but partly selective in their action on cancer tissue and the operator could not assist in the dirigibility.

The special advantage of the newer physical measure, destructive ionization, and to a less

extent thermic surgery, is that this dirigibility is assured, the operator placing the needles in positions to include all of the growth in the destructive action. The intensity of the action being within perfect control, the ionization method permits pushing the action to a final result in growths of any size in from fifteen to thirty minutes, under local or general anesthesia, thus making the treatment painless, as well as bloodless and safe from the dangers of reimplantation.

Of course, all local methods fail actually to cure a patient in whom delay has permitted the formation of internal grafts by erosion and transport, but these newer physical methods can be shown to present better statistics than the excision surgery in cases placed under them prior to metastasis. Ionic destruction, for instance, had been applied by me in 329 cases (counting all, whether metastatic or nonmetastatic) during the twenty-two years ending in July, 1915, with 147 cures, the oldest cured patient living having been treated seventeen years ago. One hundred and nineteen of these were classed as having been operable by the knife and primary growths. Under this method 105 were cured, or 88.2 percent. Two hundred and ten were either recurrent after knife operations or classed as inoperable; of these 42 were cured under the method. All cases except the smallest epitheliomas, were microscopically verified by competent pathologists.

We need all the agitation possible in favor of early destruction of cancerous growths owing to the terrible dangers from metastasis following delay, but we need also a franker examination of the value of our classical methods of prompt treatment before we can make a convincing appeal to our patients to seek treatment early.

G. BETTON MASSEY.

Philadelphia, Pa.

[This is a personal letter from Doctor Massey, which we print because the matter is of such vital importance to many of our readers.—Ed.]

CANCER PASTES, AND HOW TO USE THEM

In a letter received some time ago from Dr. J. E. Tibbins, of Beech Creek, Pennsylvania he wrote: "If any of the readers of CLINICAL MEDICINE are interested in the painless operation for the cure of external cancer and will enclose a pittance to pay for printing I will mail them the technic of the operation. If

they will follow directions and have the courage to go to the bottom and destroy all malignant cells, they will be more than pleased with the treatment. Not less than 40,000 people died of cancer in the United States in the last year. My experience in the treatment of cancer leads me to believe that 80 percent of the cancers that people are afflicted with are external, and that these are purely local for a time ranging from six months to a year, or even longer. If these growths are destroyed early, while yet local, a cure can be effected in nearly every instance of cancer of the skin."

Oldtime readers of THE CLINIC will remember Doctor Tibbins' article upon skin-cancer, which appeared in THE CLINIC in 1912.

It must be understood, of course, that, while we are glad to give this information to our readers, we must not be assumed to endorse the treatment advised. We do think it worthy of investigation, however, and see no good reason why the information offered should not be considered carefully by any reputable practitioner. However, we want to give these warnings regarding the paste-treatment:

1. Do not undertake it unless you understand the technic thoroughly.
2. Do not use it at all in cases which seem to be peculiarly malignant and in which the disease is spreading rapidly. A little loss of time may mean the loss of life. Refer the patient promptly to a competent surgeon.
3. The same advice holds true when large areas of skin are affected or when the cancer is close to a vital spot. We repeat—Do not temporize.

Now, with that warning, we hope many of our readers will take advantage of Dr. Tibbins' kind offer.

VITAL TRUTH NEVER LOITERS: POSITIVE THERAPY UPHELD IN MEXICO. SMALLPOX

Singular coincidence! CLINICAL MEDICINE, *The Journal of the American Medical Association*, *The British Medical Journal*, and *Paris Médical* all came in the same bundle today. Strange fellowship! Yet, the remorseless tidal wave of truth magnetizes and bears them onward to the same common haven—improved medicine—where all must commune, *nolens volens*, clinicians and journalists.

Frequently I have been denominated a shameless renegade of a Paul from the regular galenic faith—possibly a just epithet. The

why and how of it all is being told almost every month in CLINICAL MEDICINE better than I could write it now, were repetition in order. The tense strain the weird shadows of hostile conflict flung upon the faculties of else lethargic memory cast about me a halo of spurting impulse favorable to the writing of the old story.

Now I view with inexpressible admiration the towering majesty of the immortal mind heroically struggling to sustain the waning faith nobly worth a better cause. The startling triumphs of magic chemistry and the eloquent laudations it forces from the inspired brain of masterful literary talent hold one spell-bound under a luring influence, ample to mislead the very elect.

The strange jumble of mail matter came early by water, in a drenching norther, rendering streams impassable, holding me indoors without other caller (an occasion of solitude for twenty-four hours before unknown in my career) provoked a favorable train of disjointed thought of many things past or mayhap to come in our vague intangible medical realm.

Immaculate chemistry and coordinate dispensing pharmacy forge, link by link, what is subtly designed to become the irretrivable chain of medical slavery—too much discussed among you to require more than passing reference by me. I feel qualified for ordinary criticism of current literature; and I have spread out today before me some of the best among high-grade magazine articles—stray copies of which occasionally have passed the censor—and impartially compared them with compositions of medical-journal advertisements, and find magazine articles sadly in the lurch. The chemicals thus boosted are mostly of triumph grade when leaving the laboratories. Yet in every liquid-package, not too intensely alcoholic to decompose, the depreciation (however slightly and slowly while under manufacturing care) certainly starts at once, and proceeds more rapidly after being sent out into the channels of regular trade. Especially in climates of high temperature the process becomes destructive in a degree that neither the prescriber nor the dispenser would dream of.

Few clinicians have had the chemical training and the extensive and varied physiological experience that have been mine. Truly, the majority relegate such niceties to the pharmacist and the trained nurse. Give me the tincture of aconite, for a high-grade demonstration, and I will tell you in ninety minutes of probation in perilous fever the

degree of inferiority, compared with the active principle of the same drug.

Do you, or can you, thus protect your desperate patients, my brothers of ethical elegance? Scientific manufacture of granules and tablets of active principles indefinitely guarantees security against deterioration, if vials are properly corked. I have granules of all ages, from forty years down to my October shipment in 1915, all of equally unabated activity—extreme scarcity of medicines having forced me to the proof.

While pondering this delicate problem, curiosity prompted me to take down the catalogs of some leading gilt-edged chemists, which I had not consulted during the recent terrible years and was surprised to find that my good friends, Hance Brothers & White, fill 100 pages and Parke Davis & Co. 75 pages with active-principle listings. Certainly a timely wise hedging against the inroads the new dispensation encroaches on the long and well-defended battlements of regular galenics. And, doubtless, they produce sterling substances, some of which I have found equal to any of the same I have been using. Burroughs, Wellcome & Co. have likewise developed extremely powerful products.

In normal times, I used more or less of the products of the three firms named, except that the leading active principles, in recent years have come from Doctor Abbott's institution, since I feel it a duty to patronize the nerve and energy his venture required, in the face of the determined and influential opposition that assailed him, and knowing, as I know, that he was right and deserved support.

Since writing last month anent my smallpox involvement, I have been much deeper into the terrible pestilence, with unabated success, having had a heavy list of developed cases. The only change in treatment has been, to use 20 percent phenol in oil, as an application to sloughed surfaces, broken pustules, and ulcers—which is promptly soothing and assuaging to the pain, while exercising a gratifying influence to dry and heal, as well as perfectly disinfecting the patient. The 10 percent phenol in oil, as indicated in my other paper, is the remedy for nose, throat, and eye involvement. Thus combined with calcium sulphide and echinacoid internally, I have had a clean mortality bill in over 50 developed cases, save 6 peon deaths; the latter resulting from bathing and excessive eating of pork, after the actual disease danger had passed.

American doctors continue to dream of a medical Eldorado down here, with munifi-

cent promises of paying practice. Why, one of you, directly from the States, would starve here, with a big cash practice! I have ample means, yet never lived so wretchedly miserable as now I am living, there being nothing to buy, nor fowl, nor egg, nor milk, with scant supplies of blue bull-beef at a dollar a pound, and only the corn bread, and no sugar at all. I have no garden, because seed have been so long on the way that they do not sprout in this hotbed of creation.

Stay away from Mexico till you know what you are doing. There are delicate thin rays of light struggling to pierce and illuminate the ghastly gloom, but too feeble as yet to succeed.

I am inexpressibly grateful to the hundreds of brothers among you who are writing me such cheering appreciation for my humble contributions, and am pained to be unable to acknowledge each one personally—which most of you tell me you do not expect.

Many ask me questions about my noble French preceptors; and I have succeeded in securing their portraits, as nearly as possible approximating the time when I was with them, which I will send with this, leaving it to editorial discretion whether to present them as partial answers. Certainly, whatever of vital clinical interest my life-story contains was largely due to their teachings.

Those brothers among you who feel that my lapse from regular galenic practice has encouraged and aided them in any degree would like to see the generous features that once beamed their benign influence on me so intensely that it has been luminously reflected in all worthy usefulness my life has dispensed. My mind was germinated with their skeptical disaffection, whose feeble faith in the clinical merit of the medication of that age and time was focused in negation. The distressing truth was painfully confirmed in early failure down here in this fearful field, precipitating my renegade disloyalty to a delusive dispensation. Those illustrious men, who have left their footprints so indelibly set in the sands of time, have been honored and immortalized by breathing monuments and every other manifestation of grateful reverence the French fraternity could render.

ROBERT GRAY.

Pichucalco, Mexico.

[The pictures referred to by Doctor Gray are those of Hierard, Roger and Blache. We shall try to reproduce them in another issue]

of CLINICAL MEDICINE. Next month we shall continue Doctor Gray's autobiography, which we were compelled to omit from this number on account of lack of space.—ED.]

DOCTOR LYDSTON AND THE AMERICAN MEDICAL ASSOCIATION

There seems to be a good deal of uncertainty and misunderstanding among the profession as to precisely what Dr. G. Frank Lydston has and has not accomplished in his suit against the officers and trustees of the American Medical Association. The reports from both sides, in the public press on the one hand and in *The Journal of the American Medical Association* on the other, are very much like the newspaper reports of the war—calculated to confuse and mislead rather than to enlighten. Inasmuch as our readers are entitled to know the real facts in the case and to understand the real status of the matter, we will endeavor briefly to relate these facts and to explain this status.

It must be understood that the American Medical Association is a corporation, organized under the laws of the state of Illinois. The corporation-laws under which the Association holds its state charter require (as practically all corporation-laws do) that elections of officers and trustees shall be held within the state, and that formal notice in writing of such elections shall be sent to stockholders at least ten days before they are to be held.

However, these legal requirements, as the members are aware, have been violated apparently by the Association; for, the elections have been held in various cities throughout the country, from the Atlantic to the Pacific, and no written notices ever have been sent to members, although they are the stockholders in a corporation operating under Illinois law.

In Doctor Lydston's opinion, these irregularities in the election of officers and trustees were responsible for much of the abuse of power which he and others have for many years been charging against the governing body of the American Medical Association. Acting, therefore, upon his rights as a stockholder in the Association, he made a demand upon the state's attorney to bring *quo warranto* proceedings against the officers and trustees of the Association. The Latin phrase *quo warranto* means, "By what right?" and to institute such proceedings means, in ordinary language, that the persons involved (here, the American Medical Association officers and trustees) are cited into court to explain by

what authority they hold their respective office, and to show cause why they should not be removed and all their official acts declared illegal.

The state's attorney for Cook County (Chicago) refused to bring the proceeding, giving as his reason that there were no adequate grounds for such action. Thereupon, Doctor Lydston, brought a mandamus suit against the state's attorney, to compel him to start proceedings, as demanded, against the Association. In the lower court, Doctor Lydston lost; whereupon he appealed to the appellate court. The appellate court reversed the decision of the lower court, in a very full and explicit opinion upheld all of Doctor Lydston's contentions, and not only ordered the state's attorney to bring the *quo warranto* proceedings against the Association, but framed the issue between the contending parties. Next, the upper branch of the appellate court affirmed this decision. Then the state's attorney appealed to the supreme court of the state, asking for what is known as a writ of *certiorari*, which, in plain English, means an order for the lower courts to reopen and reconsider the case. Now, finally, the ruling of the Illinois state supreme court, recently handed down, denies the writ of *certiorari*.

The present status of the case, therefore, is that the decision of the appellate court stands. It is quite true, as the Association *Journal* points out in its January 1 number, that the supreme court rendered no decision upon the matters at issue, but simply ruled that it would not intervene in the case; but, inasmuch as the decision of the appellate court already stood in Lydston's favor, this negative ruling of the supreme court really amounts to a validation of Lydston's position. It is true, further, that as *The Journal* further states, thus far the Association, as such, is not technically a party to the proceedings at all; for, up to the present time, the issue has been between Lydston and the state's attorney. That however, is a mere technical objection: Lydston's mandamus suit was intended to compel the state's attorney to sue the Association, and he—Lydston—now has a standing order on the state's attorney, bearing the validity of the highest court of the state, calling for *quo warranto* proceedings against the officials of the American Medical Association.

Nor is that all. As the matter now stands, the questions of law have been predetermined by the decision of the appellate court. All that now has to be done is, to

prove the *facts* alleged by Lydston—and the case is won.

We make no comments upon the merits of the case. It would be injudicious to comment upon a case that is still *sub judice*. But, without any prejudice on one side or the other, we may safely say that it is an issue which ought to be thrashed out and decided; and it is greatly to Doctor Lydston's credit that, absolutely alone and unassisted, at great cost to himself and in the teeth of bitter antagonism, he has succeeded in forcing the matter to a head. Whatever the final outcome of these legal proceedings, we cannot believe that the great constructive task of the Association will suffer as a result.

STATE-BOARD EXAMINATION QUESTIONS

The following are answers to questions asked in a recent California state-board examination. The questions were printed in our January issue (see page 84) and were answered in part in the February number of this journal (see page 167).

CHEMISTRY

- Mercurous chloride, Hg_2Cl_2 .
Mercuric chloride, $HgCl_2$.
Mercurous iodide, Hg_2I_2 .
Mercuric iodide, HgI_2 .
Mercurous nitrate, $Hg_2(NO_3)_2$.
- Hydrogen peroxide (H_2O_2), when it comes in contact with either silver oxide or finely powdered platinum, breaks up explosively into water and oxygen.
- Socalled "bleaching powder" is chlorinated lime, or calcium hypochlorite. It is a powerful, non-irritative antiseptic, probably by reason of its power to give up free oxygen and chlorine.
- Diffusion is the mixing of substances through a dialyzing membrane. The substance which passes through is known as the diffusate; that which does not pass through is known as the dialyzate.
- Osmosis is the mixing of a solution and a solute through a semi-permeable membrane in accordance with the densities of saturation on each side of the membrane. The rarer solution moves toward the denser until an isotonic condition is established.
- Nitric acid is prepared by the action of sulphuric acid on a nitrate as follows:

$$NaNO_3 + H_2SO_4 = HNO_3 + NaSO_4$$
- It is a monobasic acid of great oxidizing power and with certain hydrogen compounds forms explosives of great force. It is extremely escharotic and corrosive, making intensely yellow wounds. Tests: It colors blue litmus red; darkens ferrous

sulphate in the presence of sulphuric acid; bleaches indigo solution.

6. Arsenic is usually found as a compound of sulphur or oxygen, sometimes with iron. It is separated from its oxide by heating with charcoal. Elementary arsenic is probably not toxic, but becomes so by oxidization. It is intensely irritant, but not corrosive, producing extensive inflammation and ulceration of the entire gastro-intestinal tract, with great pain, intense thirst and collapse. The antidote is ferric hydrate, prepared by precipitating a ferric salt of ammonium hydrate, and magnesium. This is known as the official antidote.

7. Lead poisoning may arise from drinking water or other fluid conducted through new leaden pipes or by the inhalation or absorption of white lead by those who work where it is used. It produces a metallic taste, thirst, colic, constipation, urinary suppression and gastro-enteritis. It is eliminated in the saliva and sweat. There is a peculiar blue line around the gums. The two principal antidotes are sulphate of magnesium and iodide of potassium.

8. A physiological antidote is one designed to neutralize the effect of a poison upon the body processes, e. g., opium in strychnine poisoning. A chemical antidote is designed to neutralize the poison itself into a new and harmless compound, e. g., ferric hydrate in arsenic poisoning.

9. Hydragyrism is the name given to a group of symptoms due to excessive ingestion of mercury. Its earliest symptom is ptalism (excessive salivation); later there is anemia, debility, ulcerated gums, fetid breath and muscular tremor. Mercury can be demonstrated in the saliva by Reinsch's test. The principal antidotes are iodide of potassium, cautiously administered, and dilute nitric acid.

10. The stomach pump is indicated in all cases of poisoning where the presence of the poison is still suspected in the stomach and where no great amount of corrosion is likely. It is contraindicated in all very corrosive poisons. Roughly speaking, therefore, one can say that the stomach pump is contraindicated in all severe acid and alkali poisonings and is indicated in all vegetable poisonings.

11. Carbolic acid is a nerve poison as well as an irritative one. It stops the heart in diastole, produces giddiness, and insensibility, and heart failure. After absorption the urine becomes dusky green and even black, due to the oxidation of hydroquinone. The urine reduces Fehling's solution. The antidotes are castor oil, olive oil and magnesia. The value of alcohol as an antidote is now being seriously questioned.

12. Phosphorus is an insidious poison, killing by means of yellow atrophy of the liver, suppression of the urine and uremia. In chronic cases there are tremors of the hand, and caries of the jaw. The treatment includes the stomach pump or copper sulphate as an emetic, which is also antidotal, and old spirits of turpentine. It is important not to give any greasy oil, as this hastens the absorption of the phosphorus.



Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

THAT ease-loving colored man who never troubled himself about subsistence, so long as his wife could get washing to do, typified one extreme view of woman as a working mechanism in the business world. At the other extreme, is that indignant reactionist who protests against woman's competition in man's domain and shrieks the sacred names of home and mother. Between the two, is a vast body of amused indifference, tinctured by radicalism and spotted by militant aggression. Indifferent to both and proceeding with the calm force of an evolutionary movement, is a vast and widening stream of women workers steadily minding their own affairs, and carrying along upon its surface the flotsam of things too small to blockade its way—a Nile not "fretted by the reeds it roots not up."

For, this movement is evolutionary—as fully so as is any in nature. It is a part of that process of the suns by which the thoughts of men are being widened. The old order changeth, giving place to new, and a very high purpose is fulfilling itself in many ways. This is only one.

—
The last twenty years have wrought many radical rearrangements in every field of life. The alterations and improvements have come so insensibly that any sudden survey of the whole is startling. We do not cognize our own acceleration.

The discovery of radium is only a luminous pinpoint in these later heavens, but it has sufficed to reshape every working-theory in physical science. We have learned how to sail the air as ships traverse the waters. We transmit intelligence over great distances, without the aid of wires. We have bridled the energy called electricity and harnessed it to half the world's work. At a stroke, so to speak, we have done away with most of the things that used to be regarded as fixed and necessary; we have broken down the old walls, let fresh breezes into old chambered spaces, we have reconstituted, not only the manner, customs, methods, and standards of life, but in large degree have shifted the

direction and quality of life itself. Hygiene has become a science, the youngest, most vigorous and assertive of them all, with prevention for its object, and by sheer necessity has busied itself in the van of this upward-surging tide.

In view of all these readjustments, it is useless to criticize the appearance of women as workers. They are here. They are going to stay. They are claiming their rights, and are getting them; and for two reasons. In the first place, we have passed out of the primitive theory that man is the fighter, the hunter, the one upon whom alone falls all the labor outside the family or the home; next, it has become a foolish idea to advise or to try to dominate women, in the belief that they cannot advise and manage themselves. The argument that strength and reason are masculine attributes exclusively and that intuition is the single governing process with women falls away before the unanswerable demonstration of everyday fact, and its place is being taken by an automatic adjustment whereby these three attributes operate harmoniously both in the home and outside. Let us recognize this and deal with things as they are.

—
"Perhaps the restlessness of modern women, which troubles so many good souls, comes in part from the fact that they tired of getting patronizing advice from the opposite sex on matters that are peculiarly their own.

"If it be the motto of the French police to look for the woman, it would seem to be the motto of almost every one in Anglo-Saxon lands to advise the woman.

"Social standpatters condescendingly tell her what is her 'place' and 'sphere.'

"Presidents and kaisers tell her her duty; which is, to bear many children.

"Bachelor college professors tell her how to economize.

"Jim Hill occasionally tells her how to keep house.

"Preachers who have imbibed wisdom by sitting at the oily feet of Mr. Rockefeller tell her how to hold her husband's affections.

"A most impressive reminder of the rapid advancement of women in positions of great business and financial responsibility is to be noted in the work of Miss Christina Arbuckle, of Brooklyn.

"Acting as administratrix of the \$37,500,000 estate left by her brother, John Arbuckle, sugar- and coffee-merchant, she is reported as handling matters with masterly skill and success.

"How many of these men who preach the doctrine of confining the 'sphere of women' to household-duties would be competent to assume such a job?"

Miss Arbuckle is a good example in this matter, but there are many others. Mrs. Charles Netcher, of Chicago, for example: Upon her husband's death, this able woman took over the management of a great and complicated business of many millions yearly. She reorganized it, broadened it out, accommodated it to the rising whorl of trade in one of the most wonderfully expansive cities on earth, and piled it up into a colossal and magnificent establishment, such as within the same twenty years would have been called a wild or impossible dream. You never hear of her. She is a worker, one of the leaders in a distinctive and strictly modern development of high significance in the domestic economy of our day. I don't say that a man could not have done the same thing. Men are doing things just like it. I merely point an argument with an instance where a woman operates the inner springs of vast and successful business actions.

Such women are at the top. They apotheosize the European wife's participation in her husband's occupations. In Germany, but more particularly in France, the woman is the man's counselor and assistant in the shop or store, making an absolute community of interest with him, without assuming headship in the firm or the family. Some great business women have developed out of that system.

England followed America closely in knocking away the old restrictions, and, next to this country, even now, shows the widest range of freedom in employment for all who wish to enter fields heretofore occupied wholly by men, in shop or office work. The spirit and effect of that emancipation are delightfully, but strikingly, shown in one of last season's most successful plays, "The Twelve-Pound Look," a domestic and social comedy

reflecting actual life and pointing the meaning and influence of woman's independence, won by unaided effort in honorable business endeavor.

Few of us stop to consider the effect of the typewriting machine, the telephone exchange, and the skyscraper. It is difficult to dissociate these in their promotion of feminine employment. The machine and the phone have become, industrially, the property of women. The skyscraper, forced toward the stars by bulging real-estate values, has operated powerfully in concentrating work and consolidating it with comfort, convenience, and hygienic surroundings.

This condition prevails in many lines, both commercial and professional. As fast as it has been found out that women can manage an office, conduct correspondence or keep accounts just as well as man can, or even better, women have been drawn into those employments and have succeeded—are succeeding—in rising degrees from year to year.

These are the lines most fully occupied. The better sort of commercial establishment comes next. Below there depends a long list calling for less mind and more muscle. In all the number of women employed is augmenting, but the department-store and the factory call most insistently for that advance in physical and moral conditions, without which the general movement itself would work out a breadth of calamity exceeding its benefits by far.

The appearance of women in office-work brought with it better sanitation. The instinctive consideration of men for women has done away with stuffy rooms, poor light and worse ventilation. The development of office-buildings on a gigantic scale has been directly influenced toward perfection in architecture and construction by this one thing more than by any other. No such building now is without its rest-room. All have conveniences that never were thought of before. Every one of them offers to women the same facilities and comforts that accompany life in the home as fully as office occupations permit. The result is shown in a marked effect upon the health of men as of women. It has demanded, and made possible, careful sanitation. It has been the cause of the universal introduction of highly perfected sanitary appliances that have raised the general health averages of many cities.

The packing together of enough people of both sexes to equal the population of a sizable country town, keeping them within four walls and under one roof, is attended now by positive hygienic advantage to all, which established custom in the office routine of business in its present forms has practically done away with that taint of prurience that accompanied the first large advent of women in business-life.

These women have shown ample ability to take care of themselves in every way. They originate in various social strata, and, aside from their occupation, cannot be assigned to any special class; but, I should say that fully one-half their number is fairly educated and of good antecedents—say the upper middle class. They have brought a new and valuable element into the business of the country. They have, moreover, demonstrated the power of women for self-sustentation, and furnished a practical argument in favor of their right to vote. In that particular, they have gone vastly further than the women who do the work of horses in some parts of Europe—say, in Holland and Belgium or in the fields of France—and whose natural demand would be nearer oats than votes. Our women in business are the aristocrats of labor, broadly speaking. The demand for help lies among those in occupations of lower pay, longer hours, coarser tasks, and greater risks.

The women and girls in the great stores—the shop-girls—present a condition that cries out for correction. It is aside from the main point to state the unhappy truth that most of these establishments are informal harems. The pay is small out of all proportion to the labor involved, yet, appearances must be kept up. Arnold Bennett remarked, with admiration, that the shop-girls of New York were better dressed than any others he ever had seen. His admiration might have been qualified by pity, had he known the full truth. For them to make their absurdly small wages cover car-fare, board, lodging, and clothes—the fixed costs of mere living—is really out of the question. Their income must be increased from outside sources. It is common knowledge that in a frightfully large number of cases this plus is increased in that age-old way that calls for no further definition. Employment covers the wretched expedient with a cloak of outward respectability, but the pitiful fact is none the less a fact for being concealed. How far it may effect changes in the ranks, it is impossible

to say. It marks a state of helotage at bitter opposition with every prompting of freedom and decency.

Still, there are features that are directly reachable and that can be shorn of their power to do harm. Some of these are in the control of their victims, others lie at the door of the employers.

In most places where the attendants and salespeople are women or girls, they are kept on their feet from eight to ten hours every weekday. No woman can long be subjected to that physical strain and escape serious internal displacements. The abdominal cavity is capable of containing all the blood in the body. Its arrangement does not permit the telescoping process. A long fight is put up by nature to protect that arrangement, and so the blood flows from other parts into the area of conflict, until a breakdown comes. Inferior nourishment and insufficient rest meanwhile added to the damage; while when the breakdown comes it brings prolonged invalidism. Escape is open by the avenue of domestic service, but this is unanimously detested; or, it is by the other one that leads to the brief, fevered, false life of the lost.

The plight of factory-girls, of women and children employed in the manual labor of sweatshops and mills is getting adequate attention as a result of agitations mainly carried on by women of spirit, convictions, and means, who have compelled attention from lawmakers and public-health-authorities. The demand for amendment runs most powerfully in behalf of women in more genteel employments, and the answer to it must come at the hands of some one or several of the societies for industrial, physical or moral betterment.

Foremost among these associations, to my mind, is the American Society for Physical and Moral Prophylaxis. This society has been organizing a movement to stamp out just such evils, stop corruptions at their source, and generally lift the level of morality as well as of physical hygiene by bringing to bear the most enlightened knowledge furnished by modern science, backed by the sympathy of earnest men and women working together systematically. Local branches of this society are being organized throughout the land, the cooperation of physicians being especially desired, but the body of workers and counselors being drawn from non-professional life. It deserves the support of the physician.

Among the Books

SECRETS OF HAPPINESS

Eight Secrets of Happiness. Edited and Published by W. A. Barnes & Co., New York. Price 50 cents.

Whatever one's conception or definition of happiness may be, in the abstract, we suppose, everyone is ready to admit that, in the concrete, it includes at least a condition of physical wellbeing. It is this phase of happiness with which the author of this little book (whose name does not appear) deals, in a simple and helpful fashion. The eight secrets are eight principles of healthy living. We do not purpose to give the secrets away. They may be yours or your clients' for fifty cents—cheap enough for such valuable secrets.

NURSES' TEXTBOOK SERIES

The Nurses' Textbook Series. *Materia Medica and Therapeutics*, by Linette A. Parker, B. Sc., R. N.; *Chemistry and Chemical Uranalysis*, by Harold L. Amoss, S. M., M. D.; *Outlines of Internal Medicine*, by Clifford Bailey Farr, A. M., M. D. Illustrated. Philadelphia and New York: Lea & Febiger. 1915.

The authors and the publishers of this series have set themselves a rather difficult task. To impart enough, yet not too much; to be generalistic, without being superficial; to give a slight knowledge of a subject, which shall at the same time be more than a smattering—this is the problem that confronts anyone who undertakes to teach medicine and its collateral branches to the nurse. And it is a problem that calls for all that one has of skill and resourcefulness, to say nothing of the faculty of getting the viewpoint of the class of persons for whom one is writing.

In the three volumes thus far issued in the series, this difficult task has been achieved with praiseworthy discrimination and judgment. Especially is this true for the volume on internal medicine, which must have been the hardest of all, in this respect, to write. Doctor Farr has known just where to draw the limitations of his subject, without making these limitations into no-thoroughfares. And

that is no small accomplishment. The same thing is true of the chemistry and the *materia medica*; but, of course, these subjects lent themselves much more readily to limitation.

Taken altogether, all three of these volumes of the nurses are excellent, practical textbooks, well adapted to that systematic instruction of nurses which of late years has happily replaced the former hap-hazard methods.

JOHNSTON'S "MEDICAL APPLIED ANATOMY": A CORRECTION

We regret that in the October number of *CLINICAL MEDICINE* (p. 980), we gave A. & C. Black as the publishers of Johnston's "Medical Applied Anatomy," also stating that the price was \$1.80. We were in error in both points: this book is published by The Macmillan Company, 64-66 Fifth Avenue, New York City, and the price is \$2.50.

FAUGHT: "LABORATORY DIAGNOSIS"

Essentials of Laboratory Diagnosis: Designed for Students and Practitioners. By Francis Ashley Faught, M. D. Fifth edition, revised. Philadelphia: The F. A. Davis Company. 1915. Price \$3.00.

The author frankly avers that his book is not intended to take the place of the many excellent and exhaustive textbooks on clinical medicine that are in the field, but, rather, to supplement them by pointing out to the busy student and practitioner simple and reliable methods by which he may obtain the desired information without incurring unnecessary expenditure of time upon difficult, tedious or untried procedures.

In this little book are presented, in concise fashion, a selection of analytical methods employed in the clinical laboratory, without burdening the student with useless, cumbersome detail; at the same time, it contains all the information necessary to provide a working-knowledge of clinical laboratory-methods for the general practitioner. Doctor Faught's experience and reputation, both as a worker and as a teacher, are sufficient guarantee of his being equal to the task.

In the present edition, the same general plan has been followed as in those preceding, although in the rearrangement accompanying the revision the author has found it necessary to eliminate, whenever possible, all discussion of clinical pathology and to confine the subject-matter more closely to laboratory technic.

HORSLEY: "BLOOD-VESSEL SURGERY"

Surgery of the Blood-Vessels. By J. Shelton Horsley, M. D. Illustrated. St. Louis: The C. V. Mosby Company. 1915. Price \$4.00.

To no department of surgical endeavor have Americans contributed so largely in recent years as to that of blood-vessel surgery. The end-to-end suturing of Murphy, the endoaneurismorrhaphy of Matas, the blood transfusion of Crile, the arterial occlusion of Halsted, and the technic of Carrel and Guthrie, all these achievements have been prominent milestones along the march of progress in this department of surgery, beside which Europe can hardly point to any equal accomplishments.

A monograph dealing with this historical aspect of the subject would be both interesting and instructive. But it is not with this side of it that the present volume deals. It is the author's aim to present the scientific and laboratory features of vascular surgery in their practical aspects, such as will be of clinical value to the surgeon and the practitioner. Consequently, the treatment of such conditions as hemorrhage (pathologic and traumatic), aneurisms, thrombosis and embolism, congenital naevi, varicose veins, hemorrhoids, and the like, are discussed, with the method of suturing vessels and transfusing blood adequately explained.

A goodly portion of the volume is taken up by the original work of the author himself—for which he apologizes in the preface, but which, in the reviewer's opinion, needs neither apology nor vindication; for, to our thinking, it is exactly this feature, more than all others, that justifies this—or any other—medical monograph.

STEVENS: "PRACTICE OF MEDICINE"

A Manual of the Practice of Medicine: Prepared Especially for Students. By A. A. Stevens, A. M., M. D. Tenth edition, illustrated. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$2.50.

The preceding edition of this book was issued in 1911, but the intervening years have been busy and fruitful ones in the realm of medical science; adding much to our available knowledge and resources, canceling some of our former ideas and practices, and working considerable change in this domain generally. There is scarcely a chapter in the present edition of Doctor Stevens' book that does not reflect this change in more or less marked degree; some have been entirely rewritten; a number of new ones have been added; there is hardly one that has not been enlarged and altered to conform to the advanced status of the times. The plan of the book, however, remains the same.

This is a manual of exceptional value. Doctor Stevens, himself a teacher of many years' experience, knows what is required of such a work, and has here supplied the demands. While, as its author avers, it is written especially for medical students, the practitioner also will find it useful and instructive, since he, too, often has need of information in condensed and easily findable form.

TOWNS: "HABITS THAT HANDICAP"

Habits That Handicap: The Menace of Opium, Alcohol, and Tobacco; and the Remedy. By Charles B. Towns. New York: The Century Company. 1915. Price \$1.20.

In his introduction, the author makes the rather startling statement that there are, in the United States, more victims of the drug-habit than there are of tuberculosis; and he calls attention to the fact that until very recently the world had heard practically nothing of the blameless men and women who had become drug-users as a result of illness. The fundamental principle in the remedy of this deplorable state of affairs, the author declares, is the adoption of methods which will put the entire responsibility upon the doctor. Whether one agrees with this statement and this stipulation or not, it must be admitted that there is, as Mr. Towns asserts, a woful ignorance on the part of the average physician in regard to the dangers and complications of opium administration, and also as to the nature and treatment of the drug-habit.

Mr. Towns is not a physician; but he is a man who has given great thought and investigation and attention to the subject of drug-addiction, and his statements and opinions are entitled to deep respect. As

most of our readers know, he is the joint administrator, together with Dr. Alexander Lambert, of the Towns-Lambert system of treatment. In this book are assembled, and presented in terse, forceful fashion, all of his experiences and conclusions; and they form a very powerful and valuable contribution to the subject, well worthy of the thoughtful consideration of every physician. Not the least valuable feature of the book is its constructive and practical note. It not only exposes the evil, but points the way toward remedying it.

SWANBERG: "THE INTERVERTEBRAL FORAMINA"

The Intervertebral Foramina in Man: Their Morphology and a Description of Their Contents and Adjacent Parts. By Harold Swanberg. With an Introductory Note by Professor Harris E. Santee. Chicago: The Chicago Scientific Publishing Company. 1915. Price \$1.75.

This book is a supplement to the same author's work entitled "The Intervertebral Foramen," which was published in 1913. Like that former one, it is a splendid piece of work in special anatomy, such as will appeal strongly to the neurologist and to the anatomist, and may even serve a useful purpose in the instruction of students in neural anatomy; but we doubt whether it will arouse much interest or attain much of a sale among the rank and file of practicing physicians.

Mr. Swanberg's former work was based on investigations upon lower animals; in this book he corroborates and enhances those investigations by an equally careful study of the human foramina. The most important practical significance of his work is, that the facts revealed by him will necessitate a complete restatement of the rationale of "cures" effected by spinal manipulation.

MORRIS: "TOMORROW'S TOPICS"

Tomorrow's Topics Series. By Robert T. Morris, M. D. Three Volumes: Microbes and Men; A Surgeon's Philosophy; Doctors Versus Folks. New York: Doubleday, Page & Co. 1915. Price, per volume, \$2.00.

In his preface to this series, the author tells a delightful anecdote about a respectable, conventional bachelor, yelept Jeff, who used to sit at table with Francis Dwight and himself, and listen to their speculative and philosophical discussions, and who enquired (in their absence) of a rather clever young woman

(also a mutual friend) whether these two young men were to be taken seriously, to which she replied, "Why, that all depends upon yourself, Mr. Jeff."

The anecdote is exceedingly apt. It all depends upon yourself, Mr. Reader, whether you take these reflections of Doctor Morris's seriously or not. For our part, we are so delighted to find a man of ripe experience in medical practice who is disposed to philosophize at all, that we are not disposed to be critical or quizzical, but are perfectly content to lean back in our Morris chair (we could not resist the pun) and hear him talk without being too particular as to whether he is serious or in fun. Indeed, the two are inextricably mixed up in real life; how should they be otherwise in genuine philosophy?

They are delightful books. They contain the philosophy and wit of a sensitive, intuitive man who has touched elbows with life in all its phases, and has not been soured, but mellowed, in the process. There are all too few such men in the medical profession, where, one should think, they ought to grow and flower, if anywhere. In these books, Doctor Morris has builded himself a much more enduring monument than his surgical career could ever have afforded him.

MOWAT: "X-RAYS"

X-Rays, How to Produce and Interpret Them. By Harold Mowat, M. D. New York: Oxford University Press. 1915. Price \$3.00.

This book is written for those who have little or no knowledge of the subject of the x-ray, and is, therefore, very elementary. The elementary facts are stated in such a simple, straightforward, yet, comprehensive way that the student or practitioner, when he has read it through, may be able to feel that he has, at least, a good general idea of this branch of medicine.

The subject of therapeutics has not been gone into, as this is now so large as to merit a volume by itself. The chapters on the thorax and the digestive apparatus have been placed ahead of those on bones and joints, because they have received so much recent study, and the author believes that the future importance of radiography is largely bound up with them. The author asks indulgence regarding accuracy of citations, on the ground that he is at present on service, and for that reason was unable to lay his hands on books or articles under reference.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6054.—"Dysmenorrhea." Regarding the case of dysmenorrhea, discussed in Query 6054 (December, 1915), I may say that I have had scores of such patients, which medical aid would not reach, but in which, upon examination, I generally found that there was a major subluxation of the second lumbar vertebra, and a prominence of the ilium, and that that caused the trouble. By a proper adjusting of this subluxation, together with an adequate dilation of the anus—so as to keep the bowels in action—I have been able to overcome the most obstinate of these cases. I only wish I were where I could demonstrate this to you, but shall be glad to answer any questions any reader may ask.

J. McDONALD.

Jamestown, N. D.

ANSWER TO QUERY 6050.—"Mental Mal-development and Opootherapy." On page 1171 of your December issue, in answering Query No. 6050, you give some information about the use of pineal-gland substance in certain mental and developmental disorders. This is doubtless valuable information, even though circumstances militate very much against the use of this agent in everyday practice; for the cost is far too great and the treatment too long-drawn-out.

Your querist asks for help in the treatment of a child, twenty months old, which is apparently nearsighted, has an internal squint, and is of improper mental development. From these few facts, I would suggest that it is much more likely that this child has a pituitary disorder with, perhaps, an increased amount of glandular tissue.

Naturally, it would be difficult to discover a number of the signs of this disorder in so young an infant; however, there may exist bilateral hemianopsia or even a primary optic atrophy, both of which conditions result from pituitary tumor. It is when this growth extends over the edges of the sella turcica, that there may occur pressure on the sixth cranial nerve, with consequent paralysis of the external recti muscles and internal strabismus.

Mental maldevelopment is one of the most common manifestations of hypopituitarism, and, so, your correspondent should consider the possibility of pituitary disease; for, he has mentioned several likely signs of just this condition.

As to treatment, that is very difficult; still, in any event, whole pituitary substance is much more likely to be effective here than the pineal substance. And it is not so expensive.

HENRY R. HARROWER.

Glendale, Cal.

Queries

QUERY 6175.—"Opisthotonus and Edema of Extremities." C. W. C., Virginia, presents the following clinical data and asks therapeutic suggestions.

"A man of forty-eight, sick about three years. Diagnosis, locomotor ataxia. Spent one year in hospital, leaving that institution six months ago. The present conditions for which I should like to have help are the terribly swollen lower limbs and feet, and the

severe cramps in them. His legs up to his knees are like churning, but there is also some edema above the knees. The cramps come on whenever he tries to straighten his legs, but especially at night in his sleep. Should he get both legs stretched out in his sleep, he is awakened at once by the terrible cramps. Sometimes the cramps are so bad that nothing but his heels and back of head touch the bed, and he has a terrible time before he can 'get

himself broken down,' as he terms it. The same thing occurs when he tries to walk, which he can only do with a man on each side of him. If he gets his legs a little bit too straight, he will yell with pain and go down in a heap, unless the assistants hold him. His mind is bright and he eats and digests well. Kidneys are normal, bowels slightly constipated. He sleeps like a log, except for the cramps. I have reduced the edema on several occasions by powerful elimination, but in forty-eight hours it is as bad as ever. The patient tries very, very hard to walk a few steps each day, and suffers very much while doing it. He had a professional masseur work on his legs and body for months, but no permanent improvement resulted. He denies syphilis as a cause, and blood tests have time after time proven negative.

"Now, what can be done for the edema and to relieve the cramps? Can I promise this man anything but a life of invalidism? He drank considerably between thirty and forty years of age and lived on the fat of the land."

After the most careful consideration of the clinical data presented, we are at a loss to explain the edema of the lower extremities. This symptom does not usually obtain; in fact, it is rarely observed in uncomplicated tabes; furthermore, it is unusual in this disease for the patient to suffer from opisthotonus. The cramps in the legs are not unusual, though we should hardly expect opisthotonus to occur under such conditions, and this symptom usually evidences serious involvement of the cord.

What was the early history in this case? Were the legs not edematous, would the patient have difficulty in walking; i. e., does he present the typical ataxic symptoms— inability to stand with eyes closed, and so on? Has the urine been examined recently? What is the condition of the heart? Is the area of hepatic dulness increased?

It is more than probable that the entire condition is due to overindulgence in alcohol; i. e., hepatic cirrhosis. We are the more inclined to this opinion as to the alcoholic origin of the condition, as syphilis is denied and repeated Wassermann tests have been negative. Can you detect areas of anesthesia about the body? The limbs, of course, owing to the edema, would be more or less anesthetic.

It is just possible that full doses of blue mass, followed by apocynoid, might prove beneficial. On general principles, chromium sulphate might prove helpful.

The present writer usually administers rather large doses of blue mass and soda, say, blue mass and soda, 2 1-2 grains hourly for three doses at night, and a full dose of magnesium sulphate (effervescing) the next morning. He then begins with the administration of apocynoid, giving one or two tablets every two hours until watery stools are secured; in some cases, small doses of scillitin with barosmoid, 1-3 grain, may be added every four hours.

Much, of course, depends upon the condition of the kidneys themselves. It is impossible to prescribe for the cramps without knowing something more definite of their origin. Hyoscamine or cicutine might control them. The application of hot compresses to the spine should also be tried. Also, it might be worth while to place the patient in a hot wet-pack for an hour, say, every third day.

QUERY 6176.—"Gleet Following Double Orchitis." P. H. J., Wyoming, desires us to outline treatment for a man of forty-four who contracted gonorrhea fifteen months ago. "Last July, his right testicle became greatly inflamed and enlarged (about four or five times its natural size), which condition was cured in two weeks. Then, in December, the left testicle became affected the same way, and it was also cured in two weeks. At times, there is no discharge from the penis and at other times there is considerable mucopurulent discharge. Under calcium sulphide, methylene-blue, and potassium permanganate, the case has improved slightly but the gleet persists."

Without a much clearer idea of basal conditions, we are, unfortunately, unable to prescribe intelligently for this patient. It is probable that this man has an epididymitis. As you had to deal with a double orchitis, it is more than likely that he is permanently impotent. The present source of mucopurulent discharge must, of course, be definitely ascertained. A urethral smear should be obtained, also the urine voided on arising in the morning be secured by the three-glass method. Both the smear and the urine should be promptly forwarded to a reliable laboratory, for examination. Much might, perhaps, also be learned from examination of a specimen of the prostatic fluid, obtained by "milking" the gland per rectum.

It is, of course, difficult—indeed, practically impossible—to check the discharge unless the causative condition is recognized. If the bladder is infected, it should be irrigated;

if the deep urethra alone is involved (which is unlikely), appropriate instillations must be made. In some cases, the lacuna magna is the seat of the infection, and the discharge will persist until this pocket has been thoroughly cleansed out. The procedure for this is described in specific literature. But, judging from the general description, your patient would seem to require the services of a thoroughly equipped genitourinary specialist.

Meantime, calcium sulphide and arbutin might be given with advantage, together with hexamethylenamine, while thymol iodide solution in oil may be injected into the urethra and the rectum. However, we hesitate to recommend definitely these or any other remedies until we have a clearer idea of conditions.

When forwarding the reports of the pathologist, give us some idea of the condition of the prostate gland and seminal vesicles, as revealed by rectal examination. Is there any evidence of stricture or a hypersensitive condition of the deep urethra?

QUERY. 6177.—“Fumigating-Cones and Ribbons.” L. H. B., North Dakota, wishes to know whether it would be practicable to incorporate the ingredients generally used in fumigating-ribbon with charcoal, in such a way that it will light easily and burn slowly, thereby fumigating the air; he having in mind, principally, balsam of tolu, benzoin, cascarilla, orris-root, storax, balsam of Peru. He says that “there are various such preparations on the market, but not any of those of which I know can be used for the purpose for which I want them.”

Of course, there are any number of fumigating-powders, pastilles, and papers upon the market, most of the pastilles being cone-shaped, produced by mixing red saunders or wood-charcoal with odorous resinous substances, potassium nitrate, and mucilage. By using charcoal, black pastilles are produced, while red saunders produces the red variety. Here are some formulas that may meet your requirements:

| | |
|-----------------------------|-------------|
| Benzoin..... | av. ozs. 2 |
| Cascarilla..... | av. oz. 1 |
| Myrrh..... | av. oz. 1 |
| Potassium nitrate..... | av. oz. 1-2 |
| Potassium chlorate..... | grs. 60 |
| Charcoal..... | av. ozs. 4 |
| Oil of cloves..... | fl. dr. 1 |
| Oil of cinnamon..... | fl. dr. 1 |
| Oil of lavender..... | fl. dr. 1 |
| Mucilage of tragacanth..... | sufficient. |

Mix the first six ingredients, previously reduced to fine powder, add the oils, and then

incorporate enough mucilage to form a mass. Divide this into pastilles weighing about 60 grains, and dry.

| | |
|---------------------------|----------------|
| Charcoal..... | av. ozs. 30 |
| Potassium nitrate..... | av. oz. 1-2 |
| Water..... | fl. ozs. 33 |
| Tragacanth, powder..... | grs. 300 |
| Tincture of benzoin..... | fl. ozs. 1 1-2 |
| Peru balsam..... | grs. 300 |
| Storax, crude..... | grs. 300 |
| Tolu balsam..... | grs. 300 |
| Oleobalsamic mixture..... | fl. drs. 2 1-2 |
| Cumarin..... | grs. 8 |

Saturate the charcoal with the potassium nitrate previously dissolved in the water, then dry, reduce to powder; incorporate the tragacanth, and then the remaining ingredients. Now form a mass by the addition of sufficient mucilage of tragacanth containing 2 percent of potassium nitrate in solution, and divide into pastilles.

Thus, the pastille mass essentially consists of benzoin, charcoal, potassium nitrate, and mucilage. Any of the aromatic oils may be added. For instance, a formula in our possession names vanillin, cumarin, musk, civet, oil of rose, oil of bergamot, oil of ylang ylang, oil of rhodium, oil of sandal-wood, oil of cinnamon, oil of orris, and oil of cascarilla.

A basic formula, which you probably will find satisfactory is as follows:

| | |
|-------------------------|-------------|
| Benzoin..... | av. ozs. 10 |
| Charcoal..... | av. ozs. 24 |
| Potassium nitrate..... | av. oz. 1 |
| Sassafras..... | av. oz 1 |
| Mucilage of acacia..... | sufficient |

Mix the first four (in fine powder), add the mucilage, form a mass, and make into pastilles.

To prepare fumigating-powder, mix benzoin (grs. 240), tolu gum (grs. 240), and storax (grs. 60) with alcohol (fl. ozs. 4), agitate occasionally for several days, filter, and add Peru balsam (grs. 60); oil of cinnamon (4 drops); oil of lavender flowers (4 drops).

To prepare fumigating-paper, pieces of unsized paper should be saturated with the liquid or, if for any reason powder is preferred, clean fine sawdust may be used and a tablespoonful of this scattered over a pan of live coals. As a matter of fact, fumigation is more thorough when done in this way than by using pastilles.

QUERY 6178.—“Dribbling of Urine.” R. H., Virginia, has a patient, a man aged fifty-five, who is troubled with dribbling of urine both night and day. He thinks that some time ago he read an article in which it was stated that rhus tox. was a specific for this disorder in women, and wonders whether this is true for men also.

If thus toxicodendron exerts an influence upon the vesical sphincter of women, it should also do so in men; and, in fact, we have found the drug thus serviceable in many such instances, especially if combined with eupurpuroid. Thuja may be also given with advantage in many cases. Where the incontinence is of nervous origin, solanine proves useful; while hyoscyamine and hydrastroid prove curative in certain cases. However, as you will readily understand, the cause of the "leakage" must, if possible, be ascertained.

If you will give us a clearer idea of the underlying conditions and, if possible, give us a report on the patient's urine, we shall be in a position to offer more definite therapeutic suggestions.

QUERY 6179.—"Emetine Reaction and Pyorrhea." J. B. McC., Illinois, writes: "I am somewhat at a loss in regard to the reaction of emetine hydrochloride. I find a large scab at the point of injection and the muscles are very sore. The patients become nauseated, as a rule. The teeth show considerable improvement, but in one instance I am unable to stop the formation of pus around two teeth. In all cases, I find the teeth a trifle loose, though not enough so to render mastication uncomfortable."

It is a fact that some individuals are more susceptible to emetine than are others. However, there certainly should be no "scab at the point of injection." If you will follow the technic outlined in the brochure on pyorrhea and its treatment, mailed herewith, we think you will have no further trouble.

Be sure that the fluid is warmed to body-temperature before giving the injection, and take pains to avoid superficial (subdermal) injections. Emetine solutions must be deposited in the loose areolar tissue underlying the skin, while the more slowly the injection is made, the better it will be.

Provided the person has the tartar and other deposits properly removed, we believe the formation of pus around the teeth will cease entirely if you will instruct the patient to use peroxide of hydrogen; then, after thoroughly drying the parts with pledges of cotton, to apply a little diluted tincture of iodine on a cotton-wrapped probe or toothpick. Then, after three or four days of such treatment, inject, with a blunt dental needle, boremetine around the teeth three times a week. Have the patient use such an astringent antiseptic mouth-wash as borothyme every morning and night and before and after

each meal. A piece of gauze wrapped around the finger or the use of a rubber masseur will prove a great deal more satisfactory in such cases than a toothbrush.

QUERY 6180.—"Treatment of Inevitable Abortion." P., Illinois, writes: (1) "I have trouble with all my abortion-cases. Have tried a variety of expedients and remedies but these procedures do not seem satisfactory to me. What is 'good treatment' in inevitable abortion?

(2) "A woman pregnant two months has, for the last three weeks, had severe pains continuously, but no hemorrhage. She has become very weak. What shall I do?"

It is quite impossible to cover fully the subjects of your communication. If we divide abortions into two classifications, threatened and inevitable, the question of treatment is simple. The difficulty lies in placing each case in the proper class.

In threatened abortion (not inevitable), we should endeavor to prevent the expulsion of the fetus, whereas, in an inevitable abortion, the sooner we empty the uterus, the better. But, bear in mind that an abortion can only be regarded as inevitable when so large a portion of the ovum is detached that life henceforth is impossible.

Palliative treatment naturally consists of rest in bed, in the recumbent posture, and the taking of remedies to check the hemorrhage and uterine contractions. Very small doses of morphine and atropine, in alternation with hydrastoid, sometimes prove useful. For the active treatment, we shall have to refer you to any good modern work on obstetrics.

As you will readily understand, where abortion is inevitable, the immediate removal of the ovum, preferably with the curette, is the treatment of choice; occasionally expression of the ovum is possible, but only when it is detached and the cervical canal sufficiently dilated to allow it to pass through. In such a case, of course, intrauterine interference is unnecessary. You will find this entire subject thoroughly covered in Jellett's "Manual of Midwifery" and in DeLee's "Principles and Practice of Obstetrics."

As you will readily understand, before we can prescribe for your patient, who has been pregnant two months and suffers from severe pain, we must have a clearer idea of the pelvic conditions and the cause of the pain. It is just possible that there is some mal-position of the uterus or that the organ is held down by adhesions. You do not state the

exact location of the pains or their character. Is there vomiting? Has the urine been examined? Is she constipated? Make a thorough examination and give us all the light you can, together with report of findings in a specimen of the 24-hour urine. We shall then be in a position to aid you more intelligently.

If the pain persists, it strikes us that it would be well (especially if examination reveals any marked uterine or pelvic abnormality) to secure counsel. Operative interference may be necessary, but it must be remembered that some women complain very bitterly until the end of the third month.

Some time ago, a correspondent asked us whether in case of abortion it would be better to ignore the retained placenta, some temperature being present, or to remove it at once with a curette. We replied that it would be extremely bad practice to leave shreds in the uterus, and quoted from Jellett's "Manual" as follows:

"It should scarcely be necessary to condemn the expectant treatment, but, as some customs die hard, it is perhaps safer to do so. The expectant treatment was in the past usually adopted, even recommended by so great an authority as Winckle. Where part of the ovum was discharged, the physician waited until one of three things happened; i. e.: (1) the remainder of the products of conception came away, the termination devoutly hoped for, and when it occurred the advocates of the treatment pointed out how successfully they had avoided any intrauterine interference; (2) the ovum decomposed and evidences of sepsis presented; (3) patient lost as much blood from repeated hemorrhages as was considered safe.

"If the second or third termination occurred, the uterus was emptied, but, unless they occurred, the condition was allowed to persist. The natural result of such a line of treatment is that in a certain proportion of cases the remainder of the ovum or placental debris comes away spontaneously and the patient gets well; more often, however, intrauterine decomposition occurs, and the infection extends to the tubes, pelvic peritoneum or the connective tissue, and the patient becomes a chronic invalid or succumbs to sapremic intoxication.

"Such procedures must be absolutely condemned. The proportion of cases in which interference is not required is infinitesimal, and the longer it is postponed, the more difficult it is to carry out, owing to the closure of the cervix.

"There are, it is true, some old-fashioned practitioners who allow 'nature to take its course,' because they are afraid to interfere; and it must be remembered that interference by an incompetent man decidedly increases the jeopardy of the patient."

If you can lay your hands on the October, 1915, issue of CLINICAL MEDICINE, see also our answer to Query 6040, "Proper Procedure in Abortion-Case." This does not deal with the medical side of the subject, but with one which is often of the greatest importance to the physician himself.

QUERY 6181.—"Anaphylaxis." G. L. M., Texas. Concerning your request for concrete information anent anaphylaxis: as to whether there is danger of such reaction in using antidiphtheritic-serum at intervals of six weeks, in a normal person, for prophylactic purposes, or what would be considered safe intervals between injections, the following brief explanation probably will cover the points.

To begin with, anaphylaxis, in its true sense, is not of very frequent occurrence in actual clinical practice. However, we do not here refer to what is known as serum-sickness and serum-rashes; although possibly these are minor manifestations of anaphylaxis.

The characteristic feature of true anaphylaxis is essentially, a disturbance of the respiratory function or even complete respiratory failure (with, naturally, resulting death). At least, that is the principal clinical manifestation.

The attention of clinicians has been directed to this condition of anaphylaxis largely as the result of experiments with cavies—or guinea-pigs—these animals probably being the most susceptible to it. This it was that, often seeing death result from the injection of even small quantities of a foreign proteid after the experimental animals had been sensitized, led medical men to fear that the thing would occur in humans. Fortunately, experience has shown this to be very rare, at least so far as a fatal issue is concerned.

The present concentrated globulin-solutions marketed as diphtheria-antitoxin are very much less prone to give rise to serum-rashes, anaphylaxis, and other like disturbances, than was the original raw horse-serum formerly employed.

In this connection, it should be recalled that there are a large number of individuals who are possessed of a peculiar idiosyncrasy to the proteids of horse-serum; consequently,

these are the ones more likely to be unpleasantly affected. Unfortunately, it is impossible to determine this susceptibility except by actual individual experiment.

The first injection, no matter what the amount, does not produce anaphylaxis. Still, a first injection may produce a serum-rash in a highly susceptible individual; and this symptom may be—and sometimes is—rather severe. During the first ten days after an injection of a serum (or, in fact, of any foreign proteid matter), the subject becomes sensitized. But, it takes ten days for this sensitization to develop; and it does not occur in ten days after any given injection, irrespective of how many previous injections of the same serum have been given. To illustrate: A patient receives an injection of antidiphtheria-serum and this is repeated every forty-eight hours for an indefinite number of times. Since the intervals are but two days, instead of ten days, the intervening period is inadequate for the patient to become sensitized; consequently anaphylaxis does not occur—despite numerous injections. But—note well—with the period of ten days next following the cessation of the injections, the subject becomes sensitized; and now, if he receives another injection of the same kind of animal-serum, the symptoms of anaphylaxis will develop—provided he is susceptible. (The same is true for any other antitoxin, such as anti-tetanus, for example.) The essential thing is, that full ten days, or more, must elapse between any two injections, in order to sensitize a subject. It is not known how long this sensitization lasts; however, it is believed by some to persist for years.

In practice, it is advisable invariably to inquire definitely into a patient's history as to whether or not he has previously received any injection of an animal-serum of any kind. If so, measures should be adopted to prevent the occurrence of anaphylaxis, if such medication with serum be required. And this object can be accomplished in a number of ways; as follows:

1. Ether- or, better, alcohol-narcosis (produced by administering the agent by inhalation, internally, hypodermically or rectally) will confer a complete, although only transi-

tory immunity from anaphylaxis. This method, however, is rarely practiced, except in grave and pressing emergencies.

2. The prophylactic injection of a serum, that is, of the same kind of serum (horse-serum or whatever is to be used) that has previously been heated to 80° C., will confer a sure and lasting immunity. This immunity, however, is but slowly established, and there is usually a slight reaction to the prophylactic injection. This fact, however, renders the method impractical from a clinical standpoint.

3. The following constitutes a practical prophylactic procedure. Either give a rectal injection of a fairly large amount (say, 5 or 10 Cc.) of a similar serum, or else desensitize the patient by means of the injection of a very small dose—1 or 2 minims—followed two hours later by another small dose, of not over 10 minims. After the lapse of a few hours, the antitoxin required may then be administered.

4. In emergencies, the administration of atropine, hypodermically, is considered by many as the ideal procedure, since the mydriatic alkaloid tends to counteract the respiratory difficulties of the anaphylactic condition.

Now, in answer to the second part of your inquiry, it can be said definitely that there is danger of such a reaction in giving to a normal person, for prophylactic purposes, antidiphtheria-serum at intervals of six weeks. To avoid this possibility (although not probability), prophylactic injections (repetition of the serum) should be repeated inside the stated period of ten days.

However, we would suggest that the patient be actively immunized by means of the prophylactic bacterin, if it has been found that the patient is not naturally immune to diphtheria—as many are—a fact that can be very readily determined by means of the so-called Schick reaction. If the patient is naturally immune, as demonstrated by the Schick reaction, prophylactic or other injections, of course, are entirely unnecessary.

We trust that we have made ourselves sufficiently clear; if not, it will give us pleasure to advise you further concerning any specific instance about which you may wish to inquire.



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THE article by Doctor Ellingwood in the March number of this journal is one that deserves more than ordinary attention. To him drugs are realities, and by no means obsolete. His faith in them as means of combating disease and relieving human misery is unquestioning. If we realize this, and rather wistfully wish that we too had reason for such faith, we may ask ourselves what is its basis, and wherein this differs from that on which our own pessimism is founded.

To begin with, Professor Ellingwood deals with real drugs, in really effective dosage. He is not an advocate of infinitesimals, or of agencies whose actual dynamic action can not be distinguished from the suggestive influences always operating when a trusted medical adviser is in charge. So decided is the activity of some of these, that the popular view among the physicians who do not use them is, that they are too powerful for general application—as for instance, with lobelia, veratrum, aconite, and euphorbium. The objection, that the medicinal applications of these mostly originated with the Eclectics, is childish. That they are mostly of native American origin is scarcely to be held a crime just now, when the worship of the European fetish has sustained so severe a blow.

All that concerns us is whether these remedies are useful and can aid us in our work as physicians.

Doctor Ellingwood's application of drug remedies is regulated by the departures from physiologic equilibrium of function presented; in other words, he does not aim his therapeutic bullets at the malady as an entity, but at the disorder of function. Quite often, if not invariably, this is true allopathy, the remedy being administered that antagonizes the symptoms present. For instance, if the bowels act too frequently an astringent would oppose the excitation of function. This does not mean that the removal of the excitant in the bowel is not first accomplished. Perhaps a better illustration would be insomnia due to excited nervous and vascular tension, when sleep may be induced by relaxing this tension.

Is this quackish, or in any way deserving of reprobation? If so, if this principle of opposing remedies exactly to presenting disorder is "irregular," then what does "regular" medicine propose to do with its drugs? Give its remedies as specifics for diseases that are not specific?

The argument for a therapy directed against the symptom-complex presenting is,

that whatever relieves the symptoms can only do so by removing the pathologic conditions that induce the symptoms. This does not apply to a mere smothering of the outward evidences of disease by opiates, bromides, and other sedatives. Such remedies do not appear in Ellingwood's lists, nor is this his practice.

There is something inspiring in the suggestion (see page 246, March CLINICAL MEDICINE) that "American physicians have right here at home everything we can possibly need in the cure of the sick." That many of these have been developed by others than ourselves is accounted for: "So engrossed has this [the regular] school been in surgery, and so very much has been accomplished in this field, during the time when the knowledge of these native vegetable remedies was developing, that the larger attention has been given to the adherents of the Homeopathic and the Eclectic schools of medicine; both of these being largely therapeutic rather than surgical schools, as is the dominant school."

As to the active principles, Ellingwood calls attention to the fact that 130 of these are now recognized in the "United States Pharmacopoeia" and in "New and Nonofficial Remedies"—surely a good beginning. How many regular physicians are there who utilize more than this number?

Doctor Ellingwood enumerates 62 indigenous remedies that he deems of importance, among those developed, as such, strictly in America. This writer finds 45 of these on his own list, and in use whenever they are indicated. In Ellingwood's new work ("American Materia Medica Therapeutics, and Pharmacognosy,"*) just off the press appear many more of these plant remedies; and if the fourth of what their advocates claim for them be true, there is here a wealth of resource for which we have crying need.

Therapeutics needs far more development of the means of curing sick organs, rather than more methods of extirpating them. We need exactly what Ellingwood offers, more remedies to correct disordered function before material lesions have been perpetuated.

The further progress of drug therapeutics and of preventive medicine lies in this direction. We must learn to recognize disease sooner, and to break up attacks before they are too firmly seated. The possibility of this is being recognized far more generally than it was a few years ago, when the eminent pessimists were doing their utmost to discourage the practician by demonstrating the absolute

impossibility of his accomplishing anything good by treatment. Nowadays we read of many typhoids being aborted in a few days by emetine, and not a voice, as yet, is raised in denial of the claims. The internist makes the same demand as the surgeon, to have his cases earlier, that he may secure better results; but when he has the case early, what is he going to do about it? Here is the need for reliable remedies of the sort suggested by Ellingwood.

We ask our readers to turn back and re-read this paper carefully, and to examine this new book. Even if you begin by looking on it as a mass of chaff, you can scarcely fail to find a few grains of good wheat among it. To us who have studied it, it is anything but chaff.

And if to be an April-fool

Is to feel contempt for iron and gold,

For the shallow fame at which most men aim—

And to turn from worldlings cruel and cold

To God in his splendor, loving and tender,

And to bask in his presence manifold—

Then by all the stars in his infinite sky,

We are April-fools, my Love and I.

—Mortimer Collins.

THE ACTION OF MEDICINES

When we read that Johns Hopkins has abolished its chair of *materia medica*, we wonder whether this can be because there is nothing more to be learned of drugs or whether they are so absolutely worthless that the time spent in their study is simply wasted. Probably the action was taken because nobody cared enough for the subject to attend the lectures on it. Still, in that event, one would think it might have been worth while to secure a man who could make his hour sufficiently valuable and interesting to attract the class.

Last March Frazier reported 82 cases of typhoid fever aborted by the use of emetine. Beckman undertook to ascertain how this could be, and submitted typhoid-bacilli to the serum of these patients who were emetized, but found that the bacilli grew freely in this medium. Emetine, therefore, does not exert a germicidal influence over these organisms. How, then, does this drug act in overcoming the disease and aborting its manifestations? Until such questions can be answered we should not close the book on *materia medica* and write *Finis* at the end of the subject. But wait—two other investigators show that the alkaloid *is* bactericidal, as you will see by turning to the "What Others Are Doing" department, this issue.

Here is another instance of the imperfection of our knowledge of drug action—can any reader tell us whether the dose of a vermifuge for tapeworm in a child should be the same as for an adult, or diminished according to the rules for dosing children? If the remedy is merely or properly a tenicide, it should require as much to kill the worm in a child as in an adult—but does it?

Some years ago this question was proposed, and the weight of evidence then presented favored the view that the dose should be made according to the child's age or weight. But in that case it must be that the remedial action is exerted by an influence of the remedy upon some of the patient's vital functions, and not a direct germicidal influence upon the worm.

Until such simple questions are solved, there is surely need for continued study of our drug-remedies. Let us hope that the medical mind may continue to develop until it is qualified to undertake such studies.

Happiness! How much it means! First of all, home—a home of our own, with wife and children gathering around our own fireside. There must be enough to eat, warm clothing, a few luxuries. There must be friends. The happiness may be tingued with sorrow and seasoned with regrets, but general pain and suffering about us are incompatible with joyous living; so, in the new and happier world to which we look forward, we can not conceive of hatred, cruelty, poverty or war.

—The Medical Standard.

THE DISPOSAL OF EXCRETA

It is not very pleasant to think of drinking dishwater, and the canons of good society do not authorize partaking of garbage; nevertheless, the science of sanitation, in so far as it relates to the prevention of disease, begins and ends with the disposal of excrementitious substances. Moreover, while the discharges of domestic animals are not specially healthful and while the horse is credited with the causation of tetanus, the most dangerous substance known to the sanitarian is human excreta.

Covering the tropics and reaching far into the temperate zones, we have just been told, the ravages of the hookworm extend. From the tropics, also, come periodic invasions of the dysentery-inducing ameba. Every part of the world is subject to typhoid fever, and the territory of this disease extends rather than contracts. Each of these three scourges is due to infection from fecal discharges containing the germs of the disease. While the larvae of the hookworm penetrate into the body through the feet, the others are taken

into the stomach with food or drink. If we could destroy the germs of these three maladies before they leave the bowels, we could soon put an end to them and thus rid the world of three of humanity's most dangerous enemies. We repeat, if we have not at present a really effective intestinal germicide, it is certainly up to us to discover one.

Meanwhile we may accomplish much by providing suitable toilets. These are especially needed on the farms, where a really sanitary privy is the exception. In rural districts, they usually are placed as near to the house as admissible, and in many instances even in proximity to the well. Throughout the southern states, there is too often no toilet at all. But even when there is one, it is, as a rule, a mere hole in the ground, too deep for the air and its salutary organisms to act upon the contents, but not deep enough to escape drainage into the well or spring.

Three devices have recently been brought to our notice, designed to meet the needs of those dwelling in isolated houses. The towns and cities are much better taken care of municipally, and are ahead of the homes in rural districts in this respect. They seem to deserve consideration.

One of these systems has received the approval of the Michigan state health-authorities and is recommended by them. It consists of a liquefying tank, from which tiled conduits carry the sewage to several points, allowing it to escape near enough to the surface to secure the disinfectant action of the air. This allows the material to be utilized as a fertilizer. It is a good system, the only objection being the cost, which, we are informed, "need not exceed \$150."

The second is an apparatus that may be placed inside the dwelling; no odor escaping from it. It also has a liquefying tank, but, instead of waiting for the slow action of the decomposing bacteria, the manufacturers claim that they have a chemical in the tank that instantly liquefies the sewage. Until we are convinced that these people have made a momentous discovery in chemistry, we must conclude that this "chemical" is caustic soda; and we doubt if this can be a safe article anywhere about a house where there are children. And what children won't do, what are the limits of their curiosity, are questions to which no answer has ever been forthcoming. The cost of this apparatus is \$53.50, plus freight. A smaller outfit supplied by the same firm is simply the pail-system, also utilizing the firm's secret chemical. The price of this is \$18.50.

The third is the system devised by Doctors Lumsden and Stokes, of the United States Public Health Service. It essentially consists of two barrels, one being the liquefying tank, the other intended to receive the overflow. Precautions are taken to prevent access of insects and to guard against odors and splashing. The total cost of this contrivance, aside from that of the superstructure—which is not considered in any of these—is less than \$5.00.

The writer has had several years' experience with the Lumsden system. If properly installed and cared for, it emits no odors, and it answers well, for example, for a summer-resort cottage. The liquefying barrel must be filled with water, and into each barrel a cup of kerosene should be poured about once a week. In about two to three months (under ordinary conditions), the second barrel will need to be emptied; and the contents may be utilized for fertilizer, provided they are deposited at a safe distance and in a direction away from the well or cistern. The soil, and consequently the water-supply, is amply protected against contamination, as not a particle of the sewage is allowed to escape from the barrels.

For the summer home or for warm latitudes, the Lumsden system is well suited; however, in cold weather, the freezing of the water will burst the barrels.

The labor of emptying the second barrel once in three months is but slight and hardly constitutes a valid objection. During the winter months, the pail-system may be employed to supplement the other, using a commode with a bucket containing freshly made whitewash, which Nuttall found most effective against the typhoid bacillus. Or, the earth-closet may be used, if preferred.

The essential parts of the Lumsden system are: two tar-barrels, costing about 50 cents each; a T-pipe, each arm a foot long and opening protected by wire netting, to exclude insects and rodents; a galvanized-iron drum, 20 inches in diameter, to rest on the first barrel and be fastened to the under side of the seat; a splashboard, to be raised to near the surface of the water when in use, and lowered afterward; suitable covers for seat and second barrel.

Where the cost is not a bar, the first-named system is preferable; otherwise the Lumsden presents many advantages. The introduction of such apparatus would not only prevent much infectious disease among farmers and country residents in general, but also keep farms from becoming foci for the dissemina-

tion of maladies, through their food-products. Here is a duty and an opportunity for the country doctor.

FALSE AND FRAUDULENT THERAPEUTIC CLAIMS

As most of our readers will remember, a little more than two years ago the federal Pure Food and Drugs act was modified and strengthened by the so-called Sherley amendment, which expressly forbade the use, on labels and circulars, of "false and fraudulent statements" relative to the therapeutic action of medicinal preparations offered for sale in interstate commerce. The constitutionality of this amendment was challenged by the manufacturer of a well-known proprietary medicine—Eckman's alterative—which was alleged to be "effective as a preventative of pneumonia," and for which the claim was also made that "it has [cured], and will cure tuberculosis." This concern, having been found guilty of making false and fraudulent claims regarding the curative properties of its "alterative," appealed its case to the Supreme Court of the United States, on the ground that the Sherley amendment was unconstitutional.

On January 10, Justice Hughes delivered an opinion, concurred in by every member of the Supreme Court, upholding the constitutionality of the Act. This opinion contains the following significant statement: "We find no ground for saying that Congress may not condemn the interstate transportation of swindling preparations, designed to cheat credulous sufferers, and make such preparations, accompanied by false and fraudulent statements, illicit with respect to interstate commerce, as well as, for example, lottery tickets."

In another place, the justice makes the following statement: "That false and fraudulent representations may be made with respect to the curative effect of substances, is obvious. It is said that the owner has a right to give his views regarding the effect of his drugs. But state of mind is itself a fact and may be a material fact, and false and fraudulent representations may be made about it; any persons who make or deal in substances or compositions alleged to be curative are in a position to have superior knowledge and may be held to good faith in their statements."

This decision is of exceeding importance, since it now definitely establishes the power of our government to prevent the sale of

fraudulent medicinal products. As a result of this decision, we may reasonably expect to see increased activity in the prosecution of patent-medicine manufacturers. Careless and extravagant statements regarding the curative action of "patents" will soon become unpopular, even with their manufacturers, since to claim too much will involve expensive and perilous litigation.

While strict enforcement of the Sherley amendment may open the way to persecutory attacks, on the whole the affirmation of its validity by the Supreme Court is bound to do great good. The man who tells the truth, the whole truth, and nothing but the truth has nothing to fear; but the man who draws the long bow when offering his wares for the cure of serious disease will learn from experience that, after all, "honesty is the best policy." If he cannot or will not learn this lesson, or if his remedies cannot stand the searching test of honest investigation, then they will be driven from the market.

"Whatever thy hand findeth to do, do it with thy might" is a precept to be accepted with discretion, according to one's strength.—Robert T. Edes.

MEDICAL TREATMENT OF INFANTILE PARALYSIS

During the past few years we have seen considerable changes in our viewpoint of poliomyelitis, for which, in great part, we are indebted to the efforts of the Rockefeller Institute, and especially to Dr. Simon Flexner, who have been doing yeoman research-work in this branch of medicine. From a practical standpoint, the net sum of these changes may be expressed in two overhead propositions:

1. The cause of the disease is now definitely determined to be a distinctive microorganism.

2. The pathology can no longer be regarded as limited to the anterior, or motor, horns of the cord, or, indeed, to any particular part of the cord. The disease attacks the interstitial gray matter of every portion of the nervous system and also the meningeal membranes. Clinically, we recognize three forms, or types, of the disease, according to the anatomical part of the nervous system that is most severely affected, and the symptomatology which therefore predominates; namely: the encephalitic, the spinal, and the meningeal. But in each of these types all are more or less involved.

Unfortunately, the definite demonstration of the determining bacillus of the disease has

not, thus far, resulted in any equally definite biologic therapy. Flexner, to be sure, has produced a serum which, if administered during the early febrile days of the disease, before paralysis has supervened, may abort the malady and limit or prevent the subsequent paralysis. This serum, however, was elaborated before the isolation of the bacillus and cannot be said to represent any specific biological therapy. It has, moreover, the disadvantages and shortcomings of all serum treatment. In any event, the majority of cases do not come under the physician's care until the nerve-substance is already damaged and paralysis has been established, so that the problem before him is, how to make the most of the surviving nerve-cells and muscles.

After all, in the present state of our knowledge on the subject, as Jelliffe tersely says, "the vascular lesions are particularly noticeable, and the interstitial and ganglionic changes depend very largely upon them." It is the vascular lesions, when all is said and done, which produce the symptoms and wreak the damage upon the nerve-cells. And it is, therefore, to the vascular lesions that our therapeutic measures must, for the most part, be directed.

It must, of course, be borne in mind, first, that the disease is an infectious one; and, if we have as yet no specific biologic weapon against the specific infection, we can at least lay the foundations of general systemic antisepsis.

Flexner has shown beyond question that the principal portal of entry for the bacillus is the nose; it is, therefore, an elementary principle of treatment that the nose and throat be thoroughly and frequently douched and swabbed (but not sprayed, for fear of spreading the infection) with antiseptic solutions, such as a 5-percent solution of phenol. Hexamethylenamine, given in fairly large doses, undoubtedly exercises a beneficial inhibitive influence upon the germs, being released by the serous membranes of the meninges in the form of formaldehyde. It must be remembered, however, that this process is dependent on the acidity of the reducing secretion, and it is, therefore, best to administer the hexamethylenamine in combination with acid sodium phosphate. Flexner's serum should be given a trial in every case where there seems to be the slightest chance of its doing good, using, of course, all the precautions which pertain to the administration of all serums. The presence of the bacillus has recently been demonstrated in the feces, which would point to

the importance of intestinal antisepsis in treatment, and of proper disposition of the stools as a measure against the spread of the disease.

He who stops short at this prophylactic treatment, however, misses his most hopeful opportunity and neglects his most effective means of influencing favorably the course of the disease and of sparing the patient much of its disastrous sequels. As we have just quoted from Jelliffe, most of the interstitial and ganglionic changes result from the vascular lesions; to which may be added that practically all of the pain results from the same pathology. The chief part of our therapy, then, should consist in a vigorous attempt to equalize circulation and to absorb the petechial hemorrhages that have already taken place into the nerve-substance.

The most elementary logic would instruct us that the rational therapeutics, in such cases, would be the same that we apply to similar conditions elsewhere in the body. The rational basis of therapeutics in inflammatory conditions is, first, derivative, then absorptive, and always eliminative therapy; and inflammations of the nervous system offer no exception to the rule. The secret of success lies in using definite, dependable remedies, and pushing them boldly, albeit intelligently, to effect.

A brisk purge of the gastrointestinal tract, by means of calomel, followed up with a saline laxative, is the first requisite. Veratrine, aconitine, and digitalin, in combination, will dilate the capillaries, slow the heart and equalize circulation in the active stages. Southwick, and others, speak highly of calcium sulphide. Cold to the head or neck and heat to the extremities will assist in the derivative process. Later, when the acute symptoms subside, ergotin and cicutine will tone up the spinal capillaries and relax the neurones. The pain usually does not call for any special treatment, being quickly relieved by the dissipation of the congestion. The pain may, however, be rendered more tolerable, while it lasts, by means of some motor antispasmodic, such as gelsemine or atropine.

Immediately upon the subsidence of the acute inflammatory symptoms, galvanism should be applied to the spinal muscles, to maintain their contractility and nourishment pending the restoration of such neurones as are destined to be restored. It must be understood, however, that galvanism (or faradism, too, for that matter) has no effect upon the restoration of the neurones themselves, and it should, therefore, be stopped

after a reasonable time (say, three or four weeks) allowed for neuronic regeneration. During the restorative period, a great deal of help may be derived from the administration of nuclein hypodermically and lecithin by the month.

It is seldom, if ever, of course, that poliomyelitis is *cured* by treatment during the active period. But it is the duty of the physician to limit, where he cannot altogether stay, the ravages of disease. And by an active, intelligent, resourceful application of therapeutic principles, abstract and concrete, to the well-defined pathology of this severe disease, he can do a great deal toward minimizing the residual paralyses and other sequels and lessening the subsequent task of the orthopedic surgeon.

It is characteristic of the really big men that they can always find time to do the things they want to do.

THE SURGICAL TREATMENT OF INFANTILE PARALYSIS

In spite of the most faithful and intelligent therapeutic treatment of poliomyelitis during its active stages, there will practically always remain a residue of paralysis and deformity, calling for the ingenuity and skill of the orthopedic surgeon. It is, obviously, beyond the range, as it is outside the function, of an editorial article to describe in detail or even to indicate in outline the surgical measures to be employed in the treatment of these cases of residual infantile paralysis; the most one can hope to do here is to point out the basic requirements of the situation, briefly state the ways in which they have hitherto been met, and call the reader's attention to one or two of the more recent innovations that have enhanced our effectiveness in dealing with them.

Up to a few years ago, the time-honored methods of treating these paralyses and deformities consisted in prescribing muscular exercises, active and passive (including electrical stimulation), mechanical supports, such as splints, casts, jackets, masts, and so on, and, as a last resort, tenotomies for the correction of irreducible deformities. And these procedures still form a considerable part of our available resources, although, of course, there have been great advances and improvements in the character and application of such devices.

The aim of all such procedures is, to afford the defective muscle-nerve mechanism its maximum efficiency, by putting it in the best-possible structural and mechanical posi-

tion to perform what function it was still capable of. And this is still regarded by most orthopedic surgeons as being the first requisite, even though it be only a preliminary to some more radical measure. However, as will plainly appear, the possibilities of all these mechanical measures are limited by the potentialities of the affected nerves and muscles themselves; they can, in short, give the muscle-nerve mechanism its maximum play, but cannot change or add to their field of function.

Within the last comparatively few years, however, two other modes of surgical treatment have been added to our resources, which break over the bounds of these limitations, and enable us to rearrange the muscle-nerve mechanism, so as to alter and extend its range of action. These two methods are, the transplantation of tendons and the transference and reimplantation of nerve-trunks; these operations being employed separately or in conjunction, as the case may be. The results attained in some instances are remarkable, even wonderful.

The principle of these two operative measures is essentially the same, namely, to cross-circuit the transmission of traction-power so as to change the direction of the resultant pull of the muscle and to furnish a defective muscle or tendon with motive-power from a source that is not defective. This is accomplished, in the one case, by crossing the transmission-cable itself, so to speak; that is to say, by transplanting the tendon. In the other operation, the object is secured by crossing the feed-wire that supplies the cable, that is, by transferring the nerve—the latter being rather more difficult than the former. There can be, of course, no hard and fast universal rules that can be laid down for the performance of operations of this nature, each case being governed by its own circumstances and the judgment of the surgeon.

The important thing is, that the introduction of these two recent procedures has greatly widened the field of effectiveness in the surgical treatment of infantile paralyses. They are especially effective and available in dealing with these paralyses of young children, because the new functional circuits thus created are readily established in the undeveloped economy of the little patient, who easily accepts and adjusts himself to the new conditions. They afford much the same sort of superior advantage over the old splint and tenotomy methods that the practice of crossing circuits in an electrical system would afford over that of simply mending and

splicing wires that were broken or displaced.

Robert Jones, who is probably the best living exponent of this type of surgery, lays down the dictum that "no operation such as tendon transplantation or nerve transference should be discussed until all deformities have been corrected and retained in correction for at least a fortnight." He then lays down various rules for the carrying out of these forms of correction. Thus, he divides the process of making splints into three steps: (1) taking a negative cast of the limb, (2) making a positive from the negative, and (3) molding the splint on the positive. Of these three steps, he says, it is essential that the first be performed by the medical man himself, in order to insure that the limb be in the correct position; otherwise, the splint will be useless. The second and third stages may be carried out either by the medical attendant himself, by an instrument-maker or by some specially trained nurse.

Concerning arthrodesis, or the artificial ankylosis, of the knee-joint, Jones declares that this should never be performed on a child. It is unwise to undertake tendon transplantation in children under five years of age, for the following reasons: (1) because of the technical difficulty of manipulating small tendons; (2) because time should be given to the muscles to recover without operation; and (3) because it is essential that the child should be old enough and intelligent enough to help voluntarily in the after-treatment.

Upon the question of the time at which mechanical treatment of poliomyelitis should begin, Jones recommends that for the first four weeks the patient have complete rest in bed, but that even during the first few days, if there be any tendency to deformity, a temporary light splint be employed. At the end of two weeks, when all pain has usually subsided, a cast of the limb should be made and a splint molded thereon—presupposing, of course, that there exists any deformity calling for surgical intervention.

Three qualities are absolutely essential in the surgeon for the successful carrying-out of these mechanical and surgical procedures, as follows: a thorough knowledge of the anatomy involved, a nice sense of mechanics, and adequate technical dexterity. If he does not possess these to a well-developed degree, he had best not attempt this type of surgery, but refer his post-myelitic patients to one who is thus qualified. They are most distressing

cases to the parents of the little patients, and they tax the patience and resources of the medical man to the utmost; but, on the other hand, under modern knowledge and facilities, and with painstaking care, they often yield most surprisingly good results and thus win the gratitude and loyalty of the family as almost nothing else in the world can do.

Try your hardest, give all you can, act by the inner light and stand true to what you know, and let the result take care of itself. You will be surprised to find that it was not nearly so bad as you think; perhaps it was more than passably good; possibly it was excellent. If you are too anxious about the impression you are less likely to succeed than if you are passionately engrossed in what you do. All is forgiven to sincerity.

—Philadelphia Public Ledger.

DEATH OF PAVLOV

Death is taking a heavy toll of distinguished members of the medical profession during these strenuous times. Thus, we have only just learned of the decease in mid-February, at Petrograd, of Ivan Petrovitch Pavlov, at the age of sixty-seven years.

Perhaps no man has contributed so much, since Beaumont, to an understanding of the work of the digestive glands of the stomach, as has Pavlov. It was he who explained the relation of appetite and sense stimuli to gastric secretion and digestion, and the discovery of secretin by Bayliss and Starling and the later developments of hormone-therapy undoubtedly rest directly upon the pioneer work of this distinguished Russian.

Pavlov, it is said, "was a charming personality, beloved by his pupils, for he was ever ready to stimulate their researches and to grant them opportunities and his personal aid in their execution."

LIFE—ITS CONCENTRATE

In the "Spoon River Anthology," Edgar Lee Masters prints the postmortem autobiographies of several hundred spooks whose bodies lie rotting in the cemetery at Spoon River, Illinois. In these prose-poems the defunct tell the absolute truth about their careers on earth. They have been dead a long time, and, hence, stand before us in spiritual nakedness, revealing all the squalor, longing, despair, meanness, disillusionment, and majesty of human life.

Of course, there were doctors in Spoon River; and they were good doctors, too. We are told that Doc Meyers, for years,

was a respected, successful, happy, generous man—too generous, in fact, for a young woman came crying to him in the night, begging to be helped out of her trouble . . . and he yielded. He died in prison. And Doc Hill . . . but let the doctor's shade tell its own story:

I went up and down the streets

Here and there, by day and night.

Through all hours of the night, caring for the poor
who were sick.

Do you know why?

My wife hated me, my son went to the dogs,
And I turned to the people and poured out my love
to them.

Sweet it was to see the crowds about the lawns on
the day of the funeral,
And hear them murmur their love and sorrow.
But oh, dear God, my soul trembled, scarcely able
To hold to the railing of the new life,
When I saw Em Stanton behind the oak-tree
At the grave,
Hiding herself and her grief!

Can you crowd into one hundred and
thirteen words so many of the conflicting
motives and emotions of this joyous, troubled,
passion-filled life? Try it.

SIMPLE REMEDIES—IN DIABETES. FOR INSTANCE

Having scoured the world for remedies, levied on earth, air, fire, and water, on animal, vegetable, and mineral, on nature's combinations as found in springs and their saline constituents when separated, having seized upon every new discovery like the x-ray, radium, and so on, and sought to detect therapeutic resources in them, we seem at last to have begun at the natural beginning and to have taken up the primary and most obvious of agencies.

The Allen treatment for diabetes examples this aptly. After trying out everything else, Allen gets down to starvation, and finds that acidosis and glycosuria alike subside under this absolute regimen. Then, starting from the basis of complete emptiness, he ascertains by very careful introduction of food, what is the exact quantity and form the patient can manage without return of the ominous symptoms. The total quantity is at first exceedingly small. Table No. 2 allows for a day 420 Grams of asparagus, celery, onions, cabbage, and spinach, with tea or coffee, or 150 calories in all.

Starvation does not, as many seem to think, occur immediately if a usual meal is missed, or if less than half the quantity necessary to support adult life is taken; life can not be sustained long under acidosis with glycosuria; but, when these are removed,

the exact quantity each patient can really utilize each day, and the least harmful forms of food for each, are ascertained slowly but surely. This method of treatment for diabetes was described fully last month. See page 254.

The success of this treatment is apt to cause ear-tingling in those of us who have been blundering along for all these years with opium, codeine, and other narcotics. Reminds one of the days when we used to pour in our intestinal antiseptics, so useful in diabetes, while the bowels were loaded with feces that furnished a constant stream of toxins to the blood. Why didn't we think of this simple method first!!!

Then there is the dry diet. For years we have urged its importance, on strictly mechanical principles, in the treatment of certain affections of the heart. The idea of reducing the unavoidable labor of a partly disabled organ to the minimum possesses a simplicity that commends it. The improvement following its application is gratifying. So also the value of strict limitation of fluid imbibition in treating obesity is quickly made manifest by a trial.

But now comes that good observer, Dr. Herbert T. Webster, of Oakland, California, who, in the current number of *Ellingwood's Therapeutist*, asserts that he can vouch for the success of a colleague who treats many if not nearly all maladies by means of the dry diet. Such widely differing diseases as advanced pulmonary tuberculosis, carcinoma, and the fibroid indurations following compound, comminuted fractures, with total loss of mobility, give way under this drugless method.

While doubtless this is too good to be true, we may realize that there are values in the dry diet that we have not yet suspected; benefits that may be discovered by trials, applications of the principle that may reveal possibilities hitherto deemed incredible by most of us.

Through complexity we progress to simplicity. From Warburg's tincture with 47 ingredients we pass through the ever shortening prescription to the single remedy, administered with definite purpose. Possibly we may in time pass through the study of every specialty, of every separate part of the human apparatus, to that of the man as an individual and learn to evaluate his vital assets. We may even reach the heights of seeking to preserve health, instead of waiting until disease is established and its disastrous assaults have been made—but we incline to

believe that before this point is attained the millennium will have overtaken us.

If, instead of "trying to rediscover things that had been already discovered and forgotten ten times over in the centuries of the past," we devoted ourselves to delving, mining, and diving into the things of the present, how much more profitable the occupation might be and how much greater the advance.—*Veterinary Journal*.

FLY-CATCHING TIME

One of the greatest advances made by modern sanitary science is the detection of insects as carriers of disease. The old air-borne and fomites hypotheses are pretty well demolished now, and we place the blame for infections on such tangible objects as flies, fleas, lice, bedbugs, ticks, and mosquitoes. The work of practical prevention is immensely simplified thereby, for the average citizen can see an insect, and he has none of the superstitious dread of it that he shows toward unseen enemies. He may look on the occurrence of an epidemic as a visitation of the anger of the great gods and consider the only pious ways of meeting it to be repentance, reform, and offerings at the altars; but he will swat the fly, without pausing to ascertain whether the pesky creature is under the protection of Apollo or Minerva.

With which erudite premise we now proceed to remark that now is the time to subscribe to the *A. J. C. M.* and eke to swat the fly. Every all-fools'-day lady fly carries about her the certainty of innumerable billions of other flies during the coming summer. Kill one musca now, and many a muscular exertion later is saved; many an objurgation is rendered unnecessary, and one's prospects for the hereafter are by that much brightened. Many a consoling moment of early morning or late afternoon slumber may be thus added to the sum total of happy time. But—how are we to get within range?

Now is the time for the wife to clean house, before the surviving flies have awakened to activity. Brush out every dormant insect from closets and the innumerable crevices in which they have taken refuge, and sweep them up and into the fire—or, better, into the chicken-coop. Nor take it for granted that the motionless creatures are dead—they're only shamming, like Kipling's fuzzies.

Borrow a post-hole digger and sink several holes in the garden, about four feet deep. In one, deposit all the garbage and dishwater, and all the other slops possible that are produced by the household. Let nothing stand about that could feed a fly. Leave no

water about or anything else that might satisfy the thirsty creature. Over this hole place a fly-trap, one of the big ones of about ten or twelve inches in diameter. The garbage will attract the flies, and the trap will catch them. Whenever there is a large-enough collection, drown them and feed them to the chickens—they need all the meat they can get, and it is well to cultivate the insectivorous habit in them. When one hole is nearly full, cover it and use the next one. A piece of raw liver as bait collects the blowflies and biting horse-flies.

Every bit of manure and offal in which flies may breed should be tucked under ground promptly. Let every member of the family understand that dishwater and water from wash-basins, thrown on the ground, attract the insects and favor their propagation. We have destroyed innumerable deer-flies by placing one of these large traps over a horse's droppings, in the woods, where the biting things had driven the horses crazy.

It seems scarcely necessary to say anything about the need of screening the premises, but one should not forget the need of using this protection for the animals in the stables also. It will surely be shown one day that tetanus may be transmitted by some biting insect that haunts the horse.

Every room in the house should be supplied with a fly-flapper, and these should be attached to hooks by long rubber cords, allowing them to be carried to every corner and then returned to their place by the elastic. Careful calculation has indicated that one-eleventh of one's time in summer is devoted to hunting for this indispensable instrument.

"Life is not only for work; it is for one's self and one's friends."

THE VALUE OF SUGGESTION

Wherever one goes, he finds himself regaled with accounts of the successes of the various suggestive-therapeutic methods that happen to be in vogue, but, as soon as the novelty of one wears off, another makes its appearance, differing only in the name and in so much of the outward seeming as may be necessary to impart the dress of novelty. The prescription for the successful introduction of such a new fangled therapy appears to be in somewhat after this fashion:

A practitioner of rather imposing appearance and an impressive personality;
A novel dress for the ancient idea;

A quasi-religious plea for the method, together with denunciations of dependence upon the "arm of the flesh," the "chariots and the horsemen of Egypt"—*ergo*, on human reason and comprehensible measures.

An enveloping domino of mystery.

That is about all, except that there must be, as a powerful accessory, an influential woman to advocate and circulate and exaggerate the matter.

Nevertheless, the doctor who fails to avail himself of the resources legitimately comprised under the term suggestion is worse than the rascal who does; for, he is a fool. And a brainy scamp is far less to be dreaded and blamed than an honest fool.

There is this difference: the wise man uses suggestion as a plus to reason and science. He ascertains, then removes, the true causes of disease, plucks out the thorn; he restores the floating viscera, slaughters the invading microorganisms, empties and disinfects the external and internal sewers, and to these material aids he adds the mighty force of suggestion.

Recognizing the tendency of humanity to superstition, such a doctor turns this into a means of aiding the cure. Not one of the purely suggestive methods can hold its own against the wise combination here depicted. We are ready to do all that the Weltmers and the Eddys can do, besides a lot more of which their ilk are ignorant and incapable of performing.

However, it is not enough that we merely brag about being able to do this—we must also do it. There is but one specialty in medicine more essential than suggestion. Better know this, and be an accomplished psychologist, than an adept in gynecology or geriatrics. Any work on hypnotism in any guise is of untold value; but, the doctor must go far beyond any single book, must know the fundamental principles upon which all suggestive methods are based. The recognition of these forms the center from which one may work in any direction.

Reduce the miraculous cures told in all the holy writs and the royal touch for the king's evil to the common denominator, and the lesson is learned. From it, we pass successfully to the estimation of Perkins' tractors, and hence down the line to Keeley, Weltmer, Eddy, Mesmer, Still, *et id omne genus*.

The popular predilection for suggestive methods of therapeutics is easily accounted for on evolutional principles. The sentiment of humanity moves, pendulum-wise, between the extremes of progress and of conservatism.

Each side applies hard names to the other—"innovation" and "fogyism," "progress" and "reaction"—and such like—but, in truth, the safety and steadiness of humanity depend upon the fairly even balance between these two forces, the one centrifugal, the other centripetal.

But, the apostle of change is always, in the eyes of the other, irreligious. And, as age is ever conservative, and it is the old who write while the young act, history is a product of advancing years. So, we read the protest against the putting on of clothes as an evidence of the consciousness of sin; and the Deity turns, from the offerings of the "degenerate" cultivator of the soil, to those of the herder of cattle. Undoubtedly, in a previous age, the divine wrath was invoked against the "impious" one who herded tame animals instead of hunting them in their still free and wild stage.

Mankind progressed from the acquisition of personal property by individual effort to its seizure by superior force; the protection of property rights by law and the altruistic principle came later. The grand principle, that the prosperity and happiness of each is assured by those of the rest, is one that is as yet scarcely recognized, except by the most advanced and enlightened thinkers.

Realizing this fundamental truth, we can explain and comprehend the difference between European sentiment and action and those of our own. The moral considerations that render Canada and Mexico safe from aggression on our part are not as yet comprehensible there, where weakness on the part of the neighbor is simply an invitation to forcible acquisition of the weaker's soil. Realization that the close bonds of amity between our northern neighbor and ourselves are worth more to each than conquest or any other form of political amalgamation is not yet possible across the Atlantic.

The European ideal is still that of the robber. The ideal of America is, industry. But, in the eyes of the East, our sole thought is that of money-making. Between that and the development of resources and individuals by peaceful industry, the European is not as yet capable of drawing the broad distinction.

His ideal is the raider who, by force, amasses wealth and then seeks to enact just such laws as may protect him in the enjoyment of his acquisitions, and transmits them to his descendants, by entail. Trace back the original source of that estate of "five thousand acres surrounded by a ring

fence," which the "lord of the manor" has received from a line of ancestors running back for centuries, and we find that it is derived from a successful act of robbery—the sequestration of lands really owned by the commons being included in this category. The next neighbor derived his title from purchase, with the proceeds of commercial or manufacturing industry—and he is looked upon with contempt by the descendants of robbers surrounding him.

So, whenever the scion of European aristocracy applies to us the derisive title of "money-grubber," "worshiper of the almighty dollar," "pork-packer," or any other name indicative of contempt, we may, in defense, inquire by what particular variety of thievery he, the "noble," came to be in possession of his ancestral domains.

My good friend, no need to be ashamed of the fact that your fortune came from the manufacture of soap, or to hang your head in the presence of the Duke of St. Albans. Would you be willing to owe your opulence to the same source as his?

Thoughts hardly to be packed
Into a narrow act,
Fancies that broke through language and escaped,
All I could never be,
All men ignored in me,
This I was worth to God, whose wheel the pitcher shaped.
—Robert Browning.

PRACTICAL POINTERS FOR APRIL

April fool—the doctor who tells his patients that "most of our drugs are worthless." Also, several other kinds of a fool.

Nocturnal syphilitic headaches and bone pains yield promptly to the iodides. Try calx iodata, in 20- to 30-grain doses, with mercury protoiodide.

You should read every line in our "What Others are Doing" department. There you will find condensed, but sufficient, accounts of all that's new and worth-while in therapy.

A solution of sodium ethylate is an efficient dermal caustic for the destruction of moles, naevi, and other cutaneous blemishes. Apply with a glass rod to the tumor only.

I want to know all that is possible to know about the successful treatment of rheumatic joints and obscure muscle-pains. Send me your best suggestion—and condense it into a single paragraph.

Ever use pleurisy-root for pains in the chest? Try bryonin. It is a favorite with the Eclectics for pleurisy, pneumonia, and all painful conditions due to congestion of the serous membranes.

If you prick your finger or otherwise injure yourself while caring for a luetic patient, rub some 33 1-3 calomel-ointment into the injured spot at once. This is an effective preventive of infection.

Whooping-cough? Scoff all you please, but calcium sulphide is our best remedy. Saturate the patient thoroughly with it. Disprove my assertion of its merit, if you can. Support its action with hyoscyamine and monobromated camphor.

Metchnikoff has shown by his work on animals that infection with the parasite of syphilis does not occur when a 33 1-3 percent calomel-ointment is thoroughly rubbed into the site of inoculation within one hour after exposure.

Have you an anemic patient—one who doesn't improve as he should under iron given internally? Try weekly subcutaneous injections of iron citrate, or of a combination of iron, strichnine, and arsenic.

Use your CLINIC index. If you haven't one, drop us a line (postal card) and it will be sent without charge. With a series of bound volumes of this journal, well indexed, you have a "cyclopedia of practice" that, for practical value to you, positively cannot be equalled.

For the weak heart of the paroxysm of angina pectoris, give caffeine and sodium benzoate hypodermically; relieve spasm with glonoin; and alleviate pain with morphine and hot applications to the precordium. Digitalis is contraindicated. This is the advice of Kohn.

With mercury salts going up like a war-balloon, the time is ripe for the doctor to use more of the vegetable cathartics; for instance, podophyllin and aloin. Why doesn't the average physician prescribe podophyllin more frequently? There's no better hepatic stimulant.

The food decomposition products, which are at work from childhood to old age, are the chief underlying factors in the production of high blood pressure and cardiac disease of later years. Thus writes R. N. Willson in the *J. A. M. A.*, "Clean out, clean up . . ." Oh, well, you know!

Allen's starvation treatment of diabetes now has "first call" with the medical "four hundred." And it has great promise. Allen is one of the brilliant group of investigators working at the Rockefeller Institute. The method was described fully in our March issue, page 254.

Atropine, given in 1-100-grain doses, hypodermically, fifteen minutes before beginning etherization, is said by W. J. Robinson

(*Critic and Guide*) to reduce the quantity of respiratory secretion, lessen spasm, raise blood pressure, and strengthen the heart and respiration. But—it may abolish the pupillary reflex.

Ochsner declares that, in his experience, gastric cancer often follows gastric ulcer when the patient has habitually eaten large quantities of food likely to be infected with manure, such as celery, lettuce, radishes, and the like. The manure-borne cancer-germ is thus conveyed to the open sore in the stomach.

Hudovernig (*Neurolog. Zentralbl.*, No. 16, 1915) says that the tissues of the dipsomaniac—the "d. t." patient—are saturated with alcohol, which can best be removed by sweating the patient with pilocarpine. Guard the heart with digitalin. Under this treatment, the percentage of recoveries rose, from 58, to 80 percent.

A supply of veratrine should be in every doctor's emergency pocket-case. Not only is it one of the best and safest remedies we have for the rapid, bounding pulse of febrile conditions, as in pneumonia and pleurisy, but it is positively the best single remedy we have for puerperal convulsions. Push it till the pulse is slower—to 80 or less.

Rosenow has learned some mighty interesting things about appendicitis. For instance, he found a *specific* type of streptococcus imbedded in the tissues of every diseased appendix. Cultures of these organisms caused appendical disease in rabbits. (Yes, rabbits have appendixes, too.) Moral: Before long, we shall be curing recurrent appendicitis with bacterins. Want to experiment? Write me.

Goetsch's int resting experiments, recorded in the *Johns Hopkins Hospital Bulletin*, show that extract of the anterior lobe of the pituitary body is a stimulant of sexual development and activity, in both sexes—at least in rats. The posterior-lobe extracts have a retarding effect. Corpus luteum (lutein) stimulates sexual development in the female, retards it in the male. So much for the experimental phase; now for the clinical.

A subscriber asks us to explain "the Gibson ratio." This is a prognostic sign in pneumonia, first described by Gibson of Edinburgh, to wit: when the figures expressing pulse frequency are as high as the figures expressing blood pressure, then the patient is likely to succumb: pulse, 110; blood pressure, 100 to 110—danger! It is of less value in children and the aged than in vigorous young adults. See February, 1915, number of *CLINICAL MEDICINE*, page 158.

Leading Articles

The Therapeutic Indications Suggested by Routine Blood Examination

By B. G. R. WILLIAMS, M. D., Paris, Illinois

Author of Williams' "Laboratory Technique for Practitioners"

EDITORIAL NOTE.—*Doctor Williams has promised us a number of papers in which he will show the practical therapeutic value of the laboratory findings. We believe that these papers will prove of signal interest and value to the readers of this journal. The general practitioner will secure from them just the assistance he needs to make the report of the clinical laboratory of maximum value to him.*

TURN on the searchlight!

An Irish private was doing picket work in northern France. Pat, it is said (of course, you need not believe this story), was equipped with pocket-flashlight, pistol, rifle. Likewise with ample instructions. But Pat was not good at remembering. In the course of the night, Pat heard a noise, whereupon he promptly shouted, "Who goes there?"

No answer forthcoming, Pat reasoned quickly: "If that is a German spy, I can get him with my rifle; if it is a Zeppelin, it would be better to shoot into the air with my pistol; but, if it is only an owl, a whoop will scare him away. I think I'll try all three and so settle the matter." Two shots resounded, then a cry pierced the air.

The result will appear further along.

Turn on the searchlight—always? You cannot diagnose a blood condition without a blood examination; and this paper has been written to prove that you cannot successfully treat a diseased system by aiming at everything all at once.

The physician glances over the blood report submitted, then attempts to detect some little point that may aid him in his treatment of the case. He ponders over the figures and the long names for the little cells (a blood report is a bit scientific and formidable), then, often, lays it down with the impression that, surely, there cannot be much of practical worth in it. I fear, too, that he will find but little in the texts to contradict this conclusion. And this has prompted me to give somewhat in detail the therapeutic indications suggested by the routine blood examination.

Pat missed the skunk creeping closely to the ground, but the pussy-cat was impressed by the demonstration and confided this fact

to Pat in its own characteristic way. Watch out for the skunk in the blood report.

What Is Anemia?

What is anemia? Only one definition suits the viewpoint of the laboratory-man. Anemia means a diminution of the number of erythrocytes (red cells) present in one cubic millimeter of blood. Most other definitions are unsatisfactory, inasmuch as generally hemoglobinemia (diminution of the hemoglobin, or blood-coloring) is included in or confounded with it. Of course, the two conditions may go hand in hand, and usually do so to a greater or less degree; but, still, we know that anemia may occur with only a relatively slight hemoglobinemia present, or the reverse.

Anemia is determined accurately by a simple counting of the red cells, though it may be suspected in a spread preparation by the fact that there do not seem to be enough red cells in a given field as compared with the number of white cells or in comparison with other preparations spread in the same manner. Certain atypical red cells may mean anemia.

The symptoms of true anemia are not characteristic, but are those of hemoglobinemia—pallor, algor, languor, and so on. But, for this very reason, the blood examination is important, inasmuch as the treatment of anemia and of hemoglobinemia are not identical. Do not look to symptomatology for your therapeutic indications.

The Causes of Anemia

Anemia is treated most rationally by aiming at the cause; and the causes of anemia may be classified roughly as follows:

1. Anemia due to hemorrhage, apparent or concealed. Concealed hemorrhage is, of course, the more dangerous type, and it includes not only types concealed by anatomical relations, but microscopic seeping, as in uncinariasis, malignant growths of the bowel, dysenteries, pulmonary tuberculosis, and renal tuberculosis where the blood may be discovered only by chemical or microscopic tests, but which, continuing a long period of time, constitutes a very grave condition, so that the patient may actually bleed to death without the true cause being recognized. In hemophilia and in severe jaundice the patient may bleed to death, without the exact location of the microscopic hemorrhages ever being ascertained.

2. Toxic anemias. Here the poisons may be introduced from without (lead and so on); or the anemia producers may be manufactured in morbid processes within the body. Under the latter heading must be included not only bacterial poisons but toxic remnants of foodstuffs or body-cells.

The surgeon can sometimes dispose of the first class very quickly, if he can locate and reach the seat of the hemorrhage. It is not always possible to do this, but we are not entirely helpless. Two therapeutic agents have been proposed, namely, normal serum and emetine.

Normal serum supplies active fibrin-ferment and other materials designed to favor clotting of the blood at the seat of hemorrhage. It has been used mainly in cases of hemophilia, but promises much in the future treatment of other types of hemorrhage.

Emetine has been administered especially in the pulmonary cases, but should be given a trial in all cases. Chauffard states that the dose should be small (0.04 to 0.06 Gm. of emetine hydrochloride), and that thus nausea may be avoided. He contends that these small doses are sufficient. It has long been known that emetine will cause blood to disappear from the stools in dysentery, and that so promptly that the action must be regarded as specific, without any relation to the disappearance of the amebæ. It seems very probable that emetine will take the place of the opium derivatives, except, perhaps, in the very acute and urgent forms.

Hemorrhage is, by no means, the more common cause of anemia. Among the toxic causes, I have pointed out lead. While lead poisoning by no means is a very common condition, I am certain that almost 50 percent of the milder cases are overlooked in

the routine of practice. In cancer, certain hemolytic bodies may be demonstrated by test-tube experiments, although we have not determined their composition. In nephritis, there may be many causes for the secondary anemia (the hemoglobinemia is usually more marked than is the anemia), but the retention of poisonous salts or acids doubtless plays a chief part.

The Calcium and Glycerin Treatment of Anemia

The most important contribution to the cause and treatment of the toxic anemias was offered by Tallqvist several years ago. While working with the bothriocephalus, he found a hemolytic substance that could account for the anemia in those affected. He discovered that this hemolytic substance was oleic acid, and that both its sodium and cholesterol salts had hemolytic properties. This suggested the cause of the toxic anemias in general, and, so, attention was directed to the fatty acids.

Vetlesen (*Norsk Magazin for Laegevidenskaben*) followed up this work, with special reference to pernicious anemia, and secured favorable results from appropriate treatment even in the severe cases. Several years ago, I myself became interested in the subject and have seen it studied in a number of cases of anemia.

In the first place, these fatty acids or acid salts must be neutralized or combined into harmless substances. Tallqvist suggested the use of calcium, which would unite with the oleic acid and form an insoluble compound; and I will here say, before passing on, that calcium, in the form of calcium lacto-phosphate, for example, does seem to be of value and should be tried in every case of anemia (that is, as defined above).

Tallqvist also suggested glycerin (chemically, glycerol, or propenyl alcohol) for binding the oleic acid, this resulting in the formation of harmless glyceryls or esters of oleic acid (oleates). I must confess that I have seen wonderful clinical benefits follow the administration of glycerin in anemia; while Vetlesen's reports indicate his satisfaction with this medication even in the so-called primary anemias.

The glycerin must be pure and, of course, be relatively free from fatty acids. Glycerin is not at present so cheaply secured as it was a few months ago, so that the physician need not fear that he will be using something "common" when resorting to glycerin. These patients usually take the glycerin very well,

indeed. Where it can be borne, give a tablespoonful, with a little lemonade, three times a day; increasing or lessening the dosage as may be indicated by the blood examination rather than by the symptoms, for, it has been stated that the symptoms are not really due to anemia in itself. Startling results are not usually secured at once. The disease may be held at a standstill, and then after a few weeks or months a slow but permanent improvement may be noticeable. If the patient does not become discouraged and will stick to the treatment, he may regain his feet.

A Word About Arsenic-Therapy

Arsenic has won a place in the treatment of anemia; but, it should never be administered for hemoglobinemia, except where the anemia is likewise consequential. The results from arsenic-therapy are more prompt than from calcium or glycerin, but are not nearly so permanent; and the use of arsenic should be followed by calcium or glycerin. The latter agents seem to neutralize the poisons producing anemia, while the former perhaps merely stimulates the manufacture of red blood-cells.

Arsenical preparations are many, and all are good. The triple arsenates or other combinations may be used. I may be a bit prejudiced, but it has seemed to me that better results followed the use of the liquid preparations, providing these were reliable. (Naturally, there is the rub!) Liquor arsenii compositus (Barclay) or a dependable Fowler's solution may be carefully exhibited in increasing dosage, and blood countings be made to check results, if clinical benefit is not pronounced.

It seems to me that arsenic-therapy is too often abused. The increase of blood-cells is followed by beneficial clinical results (if the hemoglobinemia is due to the anemia), and the physician, anxious to gain these, becomes excited and pushes arsenic even at the expense of the hematopoietic tissues. He overlooks the old law of the conservation of energy, and seems not to realize that he but hastens the day of reckoning. He gains results that are gratifying to the patient. The latter lives well for only a brief period, for, the cells thus called out, like the reserves engaged at the beginning of a battle, will be needed later. Massive doses of arsenic in a case of pernicious anemia will stand the patient on his feet within a few hours, but place him in his shroud several months before the disease, left alone, would have done so.

Use arsenic; but, drop it as readily when it has served its purpose.

The Use of Hydrochloric Acid

In cases of anemia, and especially in pernicious anemia, it is a rule that the hydrochloric acid of the stomach is deficient or lacking. This suggested to Hess a very rational treatment for all cases of pernicious anemia. Hess reasoned that the red cells might be increased in number and the hemoglobin supplied in larger amounts by administering hydrochloric acid and overfeeding with proteins. Where possible, the hydrochloric acid should be given in large dosage after each meal. In this way, persons having achylia may be able to eat larger quantities of "rare" beefsteak, eggs, cheese, nuts, and so on. In case the patient cannot be induced to eat large quantities of proteins, it is well to administer the hydrochloric acid with meat-juice, bone-marrow or other preparation carrying a high supply of proteins. Nuclein may accomplish results where all else fails.

Whereas the glycerin and calcium treatments are aimed mainly at the anemia and the arsenic treatment is aimed solely at the anemia, the hydrochloric acid and concentrated proteins are aimed both at the anemia and the hemoglobinemia; and are of especial value where the blood-index shows both conditions to be severe. The same applies to sanguiferrin, although this latter preparation is of more value in a frank hemoglobinemia, inasmuch as it contains nothing (there is some glycerin in the liquid preparation) aiming especially at anemia proper.

Hemoglobinuria

When the laboratory-man reports a low hemoglobin content, certain conditions should suggest themselves to the physician. When this hemoglobinemia can be explained by the fact that there is a marked decrease in the number of red cells, it indicates the presence of anemia together with hemoglobinemia. But in some cases (chlorosis, toxic hemoglobinemia of nephritis, tuberculosis or cancer, for instance), the hemoglobin decrease is relatively marked and the red-cell count not low, the indications for treatment are as follows:

Give iron. This is old advice, certainly, but we yet have much to learn concerning the administration of iron. And what kind of preparation shall we give? I have seen iron used in a number of cases of hemoglobinemia, and my answer may surprise some

of the readers of this journal. While iron is the best of all remedies in the treatment of hemoglobinemia, we never know just which iron preparation is likely to prove best for a given case. It is fairly certain that after a few trials we shall hit upon the proper preparation. Inorganic irons may be of great value in Case A, yet, promptly fail us in Case B. Here, in turn, organic iron may save the day, but lose the tomorrow. Each patient apparently reacts to his special iron; and we are not always able to give a reason for this, although the fact that the hydrochloric acid is deficient or absent in some stomachs may offer a suggestion.

The physician should have at hand several preparations of iron. Even an unethical proprietary may save the day where the ethical ones have failed. I have seen this happen more than once—and the physician should remember that his first duty is to his patient, his second duty to his medical society and his third to the medical politicians that infest some of our organizations. I need not mention these particular proprieties: if the reader is a successful practitioner, he doubtless knows them well—if I were to list them, some men would conclude that this article were very "unscientific, stupid, and unethical." Neither need I dwell upon the names of the more commonly accepted preparations that are known by all of us—iron sesquichloride (the most efficient and, yet, the most nasty of all irons, and in certain patients producing more harm than good), iron iodide, iron arsenate, Blaud's mass, iron phosphate, sanguiferrin, and so on.

Iron will sometimes fail in hemoglobinemia, but the percentage of failures will be less if the physician gives, successively, the several irons a fair trial. In the exceptional case, manganese may come to the rescue.

Copper Salts of Value

If iron and manganese both fail, I have even a third suggestion, and it may be worth something to you. It has been asserted that this third remedy was introduced because it was found that pale individuals recovered after eating the green scum from pickled cucumbers set aside in brass or copper kettles. Copper acetate has been of some service in several cases where I have seen iron fail. It may be given in connection with iron (always give iron a trial) or after iron has proven worthless. Remember that overdoses of the copper-salt will nauseate the patient. Copper arsenite has never been used in this disease, so far as I am informed.

It would scarcely be indicated in frank hemoglobinemia, but might be tried in a case of anemia associated with hemoglobinemia.

It is scarcely necessary to go into the subject of laxatives in connection with any treatment of hemoglobinemia. Of these, cascara preparations stand at the head. Cascara should be given alone, and not included in tablets with the iron, for we may desire to increase or decrease the dosage of one and not the other.

Leukopenia and Its Effects

Have you ever wondered why it is that a patient having typhoid fever is susceptible to abscesses, pyelitis, and a hundred and one other nasty complications such as do not follow other infectious fevers? Perhaps there are many reasons, and I am certain that we do not understand all of them, but we are able to determine in many persons (irrespective of typhoid-patients) whether the "body resistance" is low, normal or increased. Here, the blood examination becomes of great value not only to the practitioner of internal medicine, but to the surgeon as well.

While we have long recognized that a leukocytosis (absolute increase of white cells per cubic millimeter in cases not leukemic) is proof and a measure of increased resistance, we have been slow to grasp the fact that its opposite, leukopenia, means lowered resistance upon the part of the tissues of the patient. Moreover, in certain clinical conditions where his resources are needed, a normal count of 8500 white cells or a half-hearted leukocytosis may be counted a clinical leukopenia, a fact which can be appreciated only by the physician attending the case and not by the laboratory-man, which latter cannot be expected to know in every case just what clinical proposition the patient is up against. In some cases, he may suspect it, because of the high neutrophilic polynucleosis (mentioned below).

When the index of the patient's resistance is low, what shall we do? This question may be answered according to whether or not the case is operative. In appendicitis, for example, a low resistance, as shown by a leukopenia, along with certain clinical symptoms or a high polynucleosis, should mean quick intervention by the surgeon.

Treatment of Leukopenia

How will the internal-medicine-man treat the leukopenia; in other words, how adjust matters so that directly or indirectly in con-

sequence the number of white cells per cubic millimeter may be increased, providing us a favorable index? The proposition is not an easy one in all cases, but may be summed up perhaps in the general advice to furnish pabulum as rapidly as it can be used, aid in the utilization of this pabulum by the tissues as rapidly as possible, and remove waste as rapidly as possible. This all sounds good—now what of the practical application?

The Practical Application

1. Providing proper pabulum. This is a big question in dietetics, and food must be selected for the needs of the individual patient, so that this article cannot consider it at length.

2. Aiding the tissues to utilize this food. Consider the question from the mouth to the tissue-cell. Proper food will not be utilized by the cell or in fact reach the cell unless the alimentary tract is in perfect order.

If the patient swallows pus from a pyorrhea or pharyngeal trouble, take care of this. Too many tuberculous patients seal their fate by swallowing their own sputum.

What of the stomach? If it is probable that stomach acids or enzymes are needed, either supply them or stimulate secretion of the same. (I wonder why quinine in small dosage is so efficient in some of these cases?)

What of the bowel? If the colon is gorged with a rotten mass of foodstuffs taken a week ago, you need expect no "team-work" here. Such a bowel cannot properly digest and absorb the needed food-principles nor even select them from a mixture of indols, phenols, poisonous gases, bacterial masses, cellulose, and other filth. Do not hope to get pabulum to the tissue-cell if it must percolate through this mess.

Suppose the alimentary digestion and absorption is perfect, can we not also stimulate and otherwise aid the cell to utilize this pabulum? I think that we can. Do not forget nuclein, which stands perhaps first of all in this special indication, being itself a defensive protein and reconstructive and especially needed by the white blood cell. Phosphates, especially iron phosphate, are also of great value, especially where there is hemoglobinemia. Where the nerve capital is low, lecithin in connection with the nuclein is the thing.

3. Removing waste as rapidly as possible. This must be done by the bowel, by the urine, and if necessary by the sweat-glands. Enough

said so far as the readers of this journal are concerned—this is an old proposition.

An absolute leukocytosis being proof of increased resistance, calls forth no therapeutic indications. It is of diagnostic and prognostic value, but cannot be considered here.

Even as leukopenia and leukocytosis (variation in total number of white cells) may be regarded as indices of body resistance, so may the relative number of polymorphonuclear neutrophilic leukocytes (shown by differential count) be regarded as an index of toxic absorption. (In infections it serves likewise as an index of the intensity of the infection, inasmuch as the toxins vary in concentration directly with the severity of the infection.) The greater the number of neutrophiles, as contrasted with the percentage of the other types of white cells, the greater is the absorption of toxins taking place; the former being the index of the latter. This relative increase I would term a polynucleosis. Normally, these polymorphonuclear cells make up 60 to 70 percent of the white cells. Anything above 75 percent must be regarded a polynucleosis.

Treating Polynucleosis

How shall we treat a polynucleosis? The same surgical considerations mentioned above enter into some cases, but from the standpoint of the internal medicine man the following principles hold:

1. We must prevent formation of the toxins or thwart their introduction from without.
2. We must neutralize and eliminate such poisons as have already been loosed into the tissues.

We know that poisons may be strictly chemical and introduced from without, that certain of them are manufactured in the bowel, and still others are provided by infectious foci. Therefore, the discovery of a polynucleosis demands first of all an accurate diagnosis as to the source of the toxin and its nature; but, as a matter of course, we cannot undertake such a discussion in a paper of this kind. Often at the very outset, however, we may rule out a manifest infectious fever, the taking of chemical poisons, and so on. Where this can be done, we look at once for an explanation of the polynucleosis either to some hidden focus of the infection (teeth, tonsils, sinuses, gall-bladder, lungs, genital organs, and so on) or to a probable copremia. A polynucleosis should always set us searching the urine for indicans.

Cause once found, we all know the treatment—laxative salines, substitution of a

harmless and beneficial bacillus or its products, and the other measures to which I called attention in my articles on the therapeutic indications suggested by the uranalysis.

Mononucleosis

A mononucleosis may be relative or absolute. If relative, we are dealing with a leukopenia, and the indications for this have been given. An absolute mononucleosis, especially in an adult, points strongly to the presence of infectious granuloma, notably syphilis or tuberculosis. It may indicate a tuberculous infection while still latent; that is, before a decision in regard to active tuberculous disease is yet possible. A mononucleosis is the rule in tuberculous adenitis. The laboratory-man must always rule out lymphemia, and must never overlook the point that very occasionally a lymphemia may occur without a great increase in the total number of leukocytes. (Schleip.)

In a tuberculous or syphilitic mononucleosis, the lymphocytes rather than the endothelial leukocytes are increased, and our attention is directed invariably to the lymph-glands.

Overlooking the diagnostic importance of the condition, how may we treat the mononucleosis itself? There are two indications:

1. If the condition is only relative, the treatment for leukopenia will apply.

2. If the condition is absolute, we resort mainly to iodine compounds, especially calcidin. Mercuric iodide will be found valuable, as a rule, but of greater worth in the syphilitic cases.

When an absolute lymphocytosis is met with, make a differential diagnosis if possible between lymphemia, tuberculosis, syphilis, and Hodgkin's disease, but use calx iodata and possibly mercury until this diagnosis is made.

Myelemia and Lymphemia

These are discouraging conditions, even to the most enthusiastic therapist. The

physician is especially helpless in the lymphemia of childhood. Just now you are hearing much about the use of benzol—forget it. Good results apparently follow its use in some cases, but it is usually administered in large doses; and the same objection may be raised here as in the case of the large doses of arsenic in anemia—the patient lives well, but briefly. In other cases, he lives briefly, but not well. "The drug is still in its experimental stage" argue some. True enough, but it has remained there for several years—so has vinegar in the treatment of valvular lesions. Many things are in the experimental stage; but, pray, do not experiment overtime on the poor cuss afflicted with leukemia. Goodness knows his outlook is dark any way you glance at it. If benzol had ever cured any "undoubted case" (as the highbrows put it), I am sure that we should be justified in giving it another chance.

With our present knowledge, the discovery of leukemia is of more diagnostic and prognostic importance than it is of therapeutic moment. When you read over the blood report, "look out for the skunk." The true indications are usually supplied by the degree of anemia or hemoglobinemia consequent upon it or by the symptomatology. There is no known specific for leukemia, so that in all cases of leukemia a better tab may be kept on the disease by the red-cell count and hemoglobin estimation and by the symptomatology than by the leukocyte counts. A certain well-meaning man may report a case showing 60,000 leukocytes on Monday, but 50,999 leukocytes after giving a dose of such-and-such drug. But does this really mean anything?

In conclusion: Iodophilia is the result of toxemia, and, while it is a less accurate index, its meaning is the same as that of the poly-nucleosis. Eosinophilia, basophilic stippling, and certain other blood conditions are of more diagnostic than therapeutic value. Certain other findings, such as megaloblastic shower, are of prognostic value alone.

THE new (?) therapists are just beginning to learn the importance of intestinal toxemia. "The popular present-day name for this condition," says Willson in his admirable paper on "Cardiovascular Poisons," "is intestinal stasis, and the surgeons are manifesting a cordial interest in Jackson's membranes, Lane's kinks, and similar obstructions as its cause. Our grandparents knew better."

Pons Nasi

Being Some Comments Upon Deformities of the Bridge of the Nose

By RALPH ST. J. PERRY, M. D., Minneapolis, Minnesota

EDITORIAL NOTE.—A man comes to you with a crooked, flat or otherwise deformed nose. Frankly, it's ugly, and he wants it transformed into a thing of beauty. Now, what can you do for him—and what will you tell him? You want to know, don't you. The answer is—read Doctor Perry's paper. He'll put you next.

THAT portion of the nose between the root and the tip, known as the bridge, is subject to deformities, either congenitally or as a result of traumatism or disease. Owing to their many forms and variations, these disfigurements have never been classified, although a few simple descriptive words tend to identify or distinguish each one. Deviations from the ideal are either right or left lateral, concave or convex, or some combination of these, as shown in Figures 1 to 8. Lateral and convex deviations, as a rule, are congenital or due to developmental abnormalities, though traumatism is an occasional factor. Concavities of the nasal contour are more often due to injury or disease, though quite a few of these are to be seen in persons above either traumatic or pathic suspicion.

When a case of nasal deformity of any kind presents itself for treatment, the first thing to do is to secure a record of existing conditions, and, while sketches and photographs are good for the purpose, nothing excels the plaster cast; for, a cast shows indisputably the exact size and shape of the organ, the location, nature, and extent of the deformity, and, so,

when colored "to life," becomes a facsimile of the nose. The time required to make the cast, or mold, is less than that required for taking a photograph or making a sketch and usually less than that required to convince the patient that the procedure is a harmless and painless one. The method in vogue in my office is as follows:

How to Make a Plaster Cast of the Nose

Materials needed: Vaseline, olive-oil, putty or plastic clay, absorbent cotton, two camel's-hair brushes, towel or bathing-cap to protect the patient's hair, apron or towels to protect the patient's clothing, plaster-paris, table-salt, flattened breathing-tube (Fig. 9), plaster-mixing bowl, spoon, spatula, pocket-knife, warm water.

The method: The patient is placed on the chair, table or sofa, recumbent and comfortable, and the apron, towels, and cap are adjusted so as to protect the clothing and hair (Fig. 10). The eyebrows and eyelashes (and mustache, if there is one) are filled and matted down with vaseline; a wall of putty or plastic clay is built up on the face, an



FIG. 1 —
RIGHT LATERAL CURVE



FIG. 2 —
LEFT LATERAL CURVE



FIG. 3 —
DOUBLE CURVE DEFORMITY

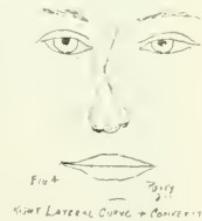


FIG. 4 —
RIGHT LATERAL CURVE + CONVEXITY



FIG. 5 —
LEFT LATERAL CURVE + CONCAVITY



FIG. 6 —
PRIMARY
CURVE
OF THE
BRIDGE



FIG. 7 —
CONCAVITY
ON THE
BRIDGE



FIG. 8 —
CONCAVITY
ON THE
BRIDGE

inch high and enclosing the nose, inner half of each orbital region and the upper lip (Fig. 11). The enclosed area and the inner side of the putty ring are now brushed over with a thin coating of the olive-oil, being care-

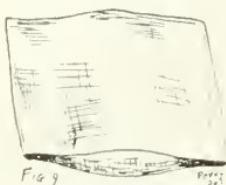


Fig. 9
The Breathing Tube

ful to leave no uncovered spots. The breathing-tube is now placed in the mouth and the patient told to breathe through it, and not to try to breathe through the nose. The nostrils are then occluded with small wads of absorbent cotton inserted very gently and very loosely, so as not to distend or distort them and these cotton plugs are brushed over and saturated with olive-oil.

To the warm water, enough salt is added to give it a saline taste, and this salty water is stirred into a small quantity of the plaster-paris to form a thick creamy magma. By an assistant, this magma is dipped with a spoon from the mixing-bowl and poured over the eyelids, eyebrows, and about the alæ and canthi,

the camel's-hair brush being used to facilitate the covering of the recesses. In brushing the magma into the folds, wrinkles, and crevices of the perinasal region, do not let the plaster set with a smooth top surface, but roughen it up a little; for, upon this foundation must be built up a backing to strengthen the cast—and a rough top surface gives points of attachment for the several batches of plaster-paris to follow. However, the final layer may be flattened and smoothed off with a spatula, as shown in Figure 12.



Fig. 11. Showing preparation of the face.



Fig. 10 Preparing to make the cast

The patient is now told to "enjoy life" for a few minutes while the plaster sets, being warned that the setting thereof is accompanied by a sensation of heat, muchly perceptible, but entirely free from danger. When this heat has become quite noticeable to the patient, a gentle tapping on the cast will give a sharp, hard sound, indicating that the plaster has set clear through. The putty wall is now removed, the cast sharply tapped, slightly wiggled, to loosen it from the skin, and then removed by drawing it downward and outward in line with the nose. In doing this, lift the cast from the forehead slightly and see whether any of the eyebrow-hairs are caught in the plaster; if so, detach them by passing a probe along over them, for they may adhere to the cast and become de-

tached from the face. Follow the same course with the eyelashes.

The cast is now set aside to dry out, while the patient's face is cleansed. A few hours in a warm room makes the cast almost water-free, wherupon it is ready to be used as a mold from which to make a replica.

If there should appear any palpable defects in the mold, which may cause trouble



Fig. 12. The plaster-paris mask is now applied.

in the casting, they must be filled in with beeswax or some sticky wax melted and flowed in with a dentists' wax-spatula. Too much oil on the face of the mold will cause bubble holes, due to the oil collecting and forming small drops.

In making this replica, the inside of the mold (that is, that part to be filled and covered with plaster-paris) is brushed with a thin coat of olive-oil, then the liquid plaster is spooned and brushed into the mold, and the mass built up until a base at least half an inch thick is secured. (The top of this cast is really its base.) As soon as the cast has fully set, it is removed, a little tapping and wiggling showing the line of cleavage between the mold and the cast; and a knife-blade inserted into the crack readily separates the two parts. Should any of the plaster cream have overflowed and adhered to parts not oiled, it can be trimmed away with the knife.

This replica (Fig. 13) is set aside for twenty-four to forty-eight hours, in order to dry out thoroughly, when it is painted over with a thin solution of paraffin in gasoline and finally colored to nature with theatrical grease paints. If the color scheme of the nose is complex, this may be duplicated upon the plaster with water-colors or oil paints before the coating of paraffin is applied. Any small defects in the replica, such as bubble holes, cracks, and so on, are filled in with plaster cream and smoothed off; rough irregularities are to be trimmed down. Lastly, the replicas are trimmed or squared to shape and marked for identification while still damp, as the plaster then can be more easily worked.

As a rule, we make two or three replicas, one of which is kept as a record of the "before treatment" condition, while the others are used in preparing models of a nose of the shape which the patient would like to have, as well as in studying out the possibilities and probabilities of the sort of nose he can have. Occasionally, to facilitate matters, a replica of the entire face is made (Fig. 14), whereby we are enabled to gauge the proportions, position, and relations of the nose to the rest of the features.



Fig. 13. Here is the completed cast of the nose.

In making these models, all measurements, estimates, calculations, artistic idealizations, speculations, and other brain-work should be gone through with before the plaster cast is touched. Concavities are built up with nose-putty or modeling-compound; convexities, tuberosities, and enlargements are reduced or eliminated by cutting and scraping away. The finished model is colored to life with grease paints.

Drawbacks and Other Considerations

While constructing such a model, the surgeon must constantly bear in mind the restrictions that hamper his work; the quality, quantity and location of the tissues at his command; the influences within and without the patient; the limitations of surgical art; lest his own enthusiasm and the opportunities



Fig. 14. A replica of the entire face.

of his patient lead to the construction of an ideal which cannot be reproduced in the features of the patient. While it is true that many of the results of cosmetic surgery are most gratifying and often amazing as artistic triumphs, it is equally true that not a few results are most grievously disappointing and bring down wrath, anathemas, condemnation, and even brutal cuss-words upon the head of the well-meaning surgeon who was overzealous in his prognosis.

One cruel fact that has been noted in this plaster-paris modeling of noses is, that the

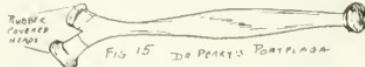


FIG. 15. *DO PORTAIS PORTPLAGA.*

feminine nose differs not at all from the masculine as to relative size, proportions, and shape; whatever differences there may be can be attributed to finer texture and color of the skin—owing to weather-beating on the part of the male and better care and toiletage of the female. By which assertion it is intended to convey the idea that some women have large, coarse noses and that some men have dainty, refined proboscis.

To illustrate some of the methods of treatment employed in the several forms of nasal-bridge deformities, let me adduce a few illustrative cases.

Correction of a Deflected Nose

Case 1. A right lateral deflection of the nose, without any history of traumatism. An examination showed a slight dis- or misplacement of the nasal bones, which may have been congenital, but most likely followed some forgotten injury in childhood or perhaps during infancy. There was also some deformity of the septum.

By means of submucous methods, the septal trouble was overcome, so that upon the straightening of the nasal bones the septum would come into normal relation with the other parts of the nose. Next came the task of bringing the nasal bones back into proper position. This may be done by using Ash's forceps to break the bones loose from their maxillary articulations or by using a lead mallet and breaking them loose by sharp blows upon the sides of the nose. These blows are not delivered directly upon the parts, but are transmitted through some intermediary substance. Some operators use a wooden block for this purpose. For some time past, I have been using what I call a portplaga, as illustrated in Figure 15 (*porto*, to carry; *plaga*, a blow or stroke); an instrument which I devised for this purpose, and which is most convenient and useful in transmitting the force of a blow to a circumscribed region or in some special direction or to some spot difficult of access.



Having loosened the articulations, manipulate the bones into their proper positions and relations in the median line and maintain them there by means of an external splint. The Cobb splint or Eisendrath's modification thereof forms a fine splint for this purpose, as it is adjustable to the individual requirements of any patient and can be used repeatedly. The case is now treated as any other fracture of the nose would be.

In many cases of lateral misplacement of the nasal bones, there is a lateral deviation of



the septal cartilages and other soft parts; in which case these conditions are to be met and overcome as detailed in a previous article. (See CLINICAL MEDICINE, Aug., 1915.) In cases presenting a double curvature or a twist, the deformity is treated by operating upon both deviations at the same seance, bringing the parts into correct relation and then applying the Cobb splint.

A Case of Congenital Concave Nose

Case 2. A concave nose of the congenital variety, several of the subject's brothers and sisters being similarly adorned. The personal history as to traumatism, tuberculosis, and syphilis was negative, and, as the tissues were in good condition, it was decided to remedy the defect by implanting a cartilage graft from the rib.

Across the bridge of the nose, on a line with the pupils, an incision was made. This incision is made slightly above the place where spectacle bows or eyeglass mountings will

rest or press in after years; for, I have seen several cases of epithelioma which I felt sure had arisen from the irritation of these optical adjuncts. The dissection consists in an undermining of the skin, and extends half an inch above the cut and as far below as may be necessary to include the concave area; and it is effected, without enlarging or unduly stretching the initial incision, by the use of specially shaped plastic-surgery knives. This wound now is covered with a protecting pad of warm moist gauze.

Through an incision over the cartilage of the eighth rib, a piece of cartilage of sufficient size is removed and then placed in a bowl of warm, sterile, normal saline solution. The costal wound is then closed again.

From the plaster replica and model, the surgeon previously has formed a fairly accurate idea of the exact size and shape the graft should be. With scissors and knives, the piece of cartilage is cut and trimmed to meet these requirements and when ready is



Fig. 18. Side view of a nasal cast.

slipped into place into its destined site underneath the skin. There should be from a quarter to half an inch of the graft above the incision and the rest below it. Carefully adjust the graft, to insure the best possible cosmetic effect, and then firmly anchor it to the underlying tissues by means of fine catgut sutures or with steel pins. If the graft seems too large or of incorrect shape, do not hesitate to remove it and trim it into correct size and shape. Having anchored the graft, the wound is closed cosmetically, dressed artistically, and the parts are allowed to heal by first intention.

Grafts of this kind occasionally excite a hyperplasia or may be absorbed; and these are sequelæ which the surgeon cannot foresee, cannot prevent, cannot control, and cannot always satisfactorily overcome, hence, are possibilities which the patient must understand.

Exceptionally, Paraffin Prothesis Is Indicated

Case 3. A nose presenting a small but well marked concavity, large enough to cause



mental perturbation, but, yet, not large enough to justify a graft. The case is one of the few suitable for paraffin prothesis. Under aseptic conditions, using a special paraffin-syringe and a properly prepared cold paraffin mass, a small quantity of the latter is implanted under the skin and manipulated into such shape and position as will obliterate the disfigurement.

Personally, I have an antipathy against the promiscuous use of paraffin in cosmetic work, because I have seen so many cases where disastrous sequelæ developed after the work had been done—sometimes months afterward—and which were due solely to the paraffin. Hyperplastic growths, color changes in the skin, and dislocations of the paraffin implants are the commoner causes of complaint in cases which have come to me to have the paraffin removed or for some other remedial operation. And these adverse results occur in the work of those presumably expert in the technic, just as often as when

done by amateurs; they seem to be owing largely to causes as yet little understood.

Case 4. A case presenting a malformation of the nasal bones, as shown in Figure 16. The nasal bones have no muscular attachments, being intended to give form and strength to the nasal cavity, and any deviation from the typical normal may be regarded as a malformation, even though there be no disease or displacement. In this case, the over-development is so marked and so at variance with the ideal and with the other parts of the nose that necessarily a deformity results. To remedy this cosmetic defect, a median incision was made over the bones, through this the superabundant bone was chiseled away, and the fresh bone edges were smoothed up with a bone-burr or a bone-file. The wound was closed cosmetically and an aristol dressing applied. The final result is shown in Figure 17.

Eagle Beaks and Broken Noses

Case 5. A case of "Roman nose" (Fig. 18), from which the owner desires to have the convexity eliminated. Here, the osseous factor enters only slightly, and because of the cartilaginous element it is one which lends itself very favorably to the subcutaneous method of operating.

A small incision is made into the subseptum, near the tip, and the opening extended upward, subcutaneously, by means of a two-edged pointed knife, until it reaches just above the beginning of the "hump." A



spoke-shave is now passed up and the superfluous cartilage trimmed away (Fig. 19). If it is necessary to remove any bone, this can be done with the small chisels. When sufficient tissue has been removed to reduce the nasal contour to classic proportions, the cavity of the wound is cleansed, swabbed with aristol powder, and the external opening closed with a single fine stitch. The loosened parts are kept in apposition by means of a splint of sheet gutta-percha (Fig. 20), molded to shape over the model, and kept in position by means of zinc-oxide plaster strips.

Case 6. A case of broken nose, with the usual consequent deformity following the usual expectant treatment. As a matter of fact, very few "broken" noses are really more than dislocations of the nasal bones, and the failure to replace the bones immediately results in the broken contour. Adhesions eventually develop, so that, when in later years the patient comes for a cosmetic operation, it becomes necessary to break up or cut away these malunions. This can be accomplished by the use of the Ash forceps or, in aggravated cases, by cutting with a chisel, the instrument being introduced through a small incision at the side of the nose. When loosened and restored to place, the parts are held in proper relation by means of the Cobb splint.

Case 7. "Broken nose." Here, the bones not only are badly displaced, but the septal cartilages are so distorted that the entire upper part of the nasal cavity is occluded

by the hyperplasia consequent upon the traumatism. Several methods of operating have been devised for opening the nasal cavity to remedy such a condition or for the purpose of removing neoplasms, and the one which appeals to me as giving the best cosmetic results in this case is that of Rouge.

The upper lip is drawn up, an incision is made along the gingival junction and as much of the nasal structures loosened from the superior maxilla as is found necessary to fully expose the field of repairs. With a free hand and a clear field of observation, the surgeon may now dissect, chisel, and cut until the structures are fixed to his liking. The nasal tissues are then replaced and carefully sutured with fine catgut; the labio gingival incision is closed with horsehair or fine silkworm gut. A retention-splint of molded guttapercha should be worn for several days. Such an operation leaves no visible scars.

Proper Care of Automobile Tires

Suggestions for the Doctor Who Owns a Car

By A. L. BENEDICT, M. D., Buffalo, New York

MOST automobiles placed on the market are equipped with tires of good quality, and, so far as personal experience and observation go, there is comparatively little difference between the various tires recognized as standard. As to those not so classed, one can find some of equally good quality; but, others are very poor.

To begin with, an automobile tire should be reasonably thick and heavy and smooth on the inside. The rubber itself should be rather hard, but not to the degree of presenting a brittle surface, nor so soft as to be cut by a stone unless the latter is very hard and presents acute angles. There is not so very much difference between inner tubes. Minor blemishes do not count for much, so that a cheap "second" tire frequently may give good service proportionate to its lower cost.

What should be expected of a tire? As a rule, roughly speaking, one of small size should last on an average for about a 5000-mile service, and inner tubes about two or three times as long. Obviously, the larger the diameter of a tire, the fewer number of times any given sector of it comes in contact with the road for each mile; hence, larger

tires wear longer than smaller ones, although not proportionately longer with reference to the cost. The same statement as to increased durability holds good as to the section, or caliber, diameter, but merely because such tires are usually thicker and stronger. Comparing small and medium-size tires, the latter should wear about 50 percent longer and cost about twice as much.

The average mileage-cost for small tires, including inner tubes, should be just about 1 cent a mile for the four wheels. If the rear wheels have tires of greater lumen, they will last a little longer, so that the average is just about 1 1-3 cent a mile a tire. There will be enough saving on this average for outer shoes to cover the expense of inner tubes. Medium-size tires cost about 1 1-3 to 2 cents a mile per set of four, and the expense increases for large cars, which practically always need corrugations on the surface of the tires, up to about 10 cents a mile for the set.

Oversize Tires

Many assert that manufacturers put out cars with the cheapest (that is, the smallest) tires that will support the weight with a fair degree of satisfaction. Hence, they ad-

vocate using oversize tires. On the other hand, oversize tires are more difficult to remove and replace, and it is a fair assumption that the manufacturers know their business. Oversize tires certainly cost more, absolutely. Whether they cost less relatively to mileage is an open question.

For heavy cars, corrugated-tread tires are undoubtedly a safeguard, perhaps a necessity. They cost more initially, and they wear smooth so, that, when corrugations are really needed, the tires in use must be discarded before they are actually worn out. The corrugations do not entirely take the place of chains, while chains are particularly hard on this kind of tires. For small, light cars, plain, smooth tires are the cheapest, the easiest to repair, and perfectly safe if one will use chains when necessary. Except for soft mud, deep snow, and icy ruts, chains are not necessary for a small car, if one will limit the speed to 15 miles on straight city running, run into neutral at not over 10 miles an hour for turns or on approaching a crossing, or at any time when a quick stop may be required. With these precautions, chains are not necessary simply on account of rain, light snow or ice in the absence of ruts, unless there are heavy grades.

Tire-stuffings of every kind have proved unsatisfactory. They are heavy and speedily lose their original elasticity. Except for guarantee against trouble in an emergency, such devices do not save expense. Solid and cushion tires are heavy, do not prevent jarring, and, hence, tend to loosen bolts and screws, and are especially wearing on the engine. As to puncture-proof pneumatic tires, there is, in the first place, no such thing; in the second place, while a virginal tire is highly desirable, a mechanic insurance of virginity involves undesirable features.

The only thing in nature that approaches perfect elasticity—remembering that the word theoretically and practically implies instant recovery of shape, rather than softness and gradual restoration of shape—is a gas under pressure. There is no satisfactory substitute for the pneumatic principle, and there is no method so perfect as to secure absolutely against leakage.

Tire leakage may be classified under the head of (1) punctures, (2) blowouts, (3) valve defects, and (4) miscellaneous causes.

Punctures

Punctures may be largely avoided by watching the road; encouraging and practicing the habit of picking up nails, and the like;

avoiding macadamized state roads, which have been said to be paved with Indian arrowheads and oil; and avoiding, if possible, the rear approaches to garages and repair-shops and to farm-buildings. After running over glass, state roads or any other suspicious pavement, inspect the tires and pick out bits of glass, stone, tacks, and the like, if any are found, as these may work in deeper. When a puncture occurs, stop immediately.

The beginner may not be aware of a puncture or flattening of a tire, especially if he is on the front seat and the trouble is with a rear tire. Any sibilant or explosive noise is significant, and there is a peculiar bumping that is not of the same tempo as the kicking of a unit of the engine, but more regular than the accidental bumpings caused by a bad road, although almost exactly imitated by certain wavy brick roads. If the tire sticks, run a few feet further on the flat tire, but only after removing the cause of the puncture. One of the writer's friends boasted that he could run a whole evening on a flat tire without sustaining any damage; shortly afterward, however, a garage-man told of mending seven separate punctures from the same nail in his tire. Occasionally, by good luck, the puncture can be readily located, in the upper part of the tire, and the leak in the inner tube repaired with a gasolin patch after removing a small segment of the outer tube, without even using the jack or removing the valvestem.

Always look for a puncture on the opposed surface of the inner tube. A large opening in the tube or a multiple puncture is better treated by vulcanizing. Remove the entire inner tube, put in a new one, and make the repair at home or at a garage. If the wheel and tire are dusty or muddy or wet, make clean before removing them, using a brush, duster or cloth, according to circumstances. If any dirt, broken glass, pebbles or the like has come between the outer and inner tubes, or if the talc has caked, wipe it out. Sometimes, the finger will detect an imbedded tack, broken needle or spicule of flint, which will cause fresh trouble, and it may be that such a lesion is the real cause of the puncture and that a nail, large sharp stone or cut without a foreign body has not penetrated. Never replace the outer shoe until the inner tube has been dusted thoroughly with talc and inflated, so that it presents no creases to catch under the rim.

Blowouts

Blowouts are due to defects in the outer tube. While they often start from a puncture

that admits water and gradually allows rotting and fraying of the fabric, they may occur without any lesion of the protective rubber covering, and may consist of a rip along the edge of the beading. The inner tube may explode or may receive a minute puncture through a hole in the outer tire that is not large enough to threaten its retaining strength directly. A good-sized blow-out practically ends an outer tube. Unless caused by a local defect in an otherwise good and little-worn tire, it does not pay to repair them by inserting a new section, retreading, sewing two tires together or by any other device that costs any considerable amount. Such repairs do not usually give additional mileage proportionate to the expense, especially if we estimate the value of the old tire as junk at 50 cents, or 200 miles, and if we bear in mind the increased vulnerability and labor involved in using an old tire.

The ordinary blowout patch is of value to prevent a blowout following a puncture, or to allow a few more miles to reach home, but it is worthless in case of a good-sized blowout. Blowout patches that are really efficient, that will give as much as 500 or 1000 miles additional service, and that will allow a tire to hold till the hole becomes almost 2 inches in diameter, but which are not of much use against a longitudinal rip along the beading, may be made as follows:

Cut an old outer tire into lengths of 1 to 2 feet, rejecting parts that are much damaged. Cut off the beading with a heavy sharp knife, beveling with the first cut so as to leave a fairly sharp edge. Bevel and round off the ends similarly, so that the rubber-covered portion is shorter than the fabric. By holding the edges and ends between two pieces of board, with about 1 inch of tire projecting and then clamping in a vise, complete the beveling with the knife and rasp so that the patch, as spread, has a broad surface of fabric, frayed soft at all edges and projecting a little beyond the rubber. The rubber need not be cut off except along the edges and ends.

These blowout patches are stiff and thick enough to hold the tire for a good many miles and can be used over and over again. Do not make them too short, both because a blowout needs a good deal more protection than appears possible to the novice and particularly because a short patch will twist and cause further ripping and will bump on the road.

Valve Defects

Valve defects are naturally thought of when a tire leaks gradually or after repairing a

puncture. They are not, however, very common, the chances being in favor of a concealed puncture as from a spicule of flint or pin or the like imbedded in the outer tire and not visible. On the road, they are easily detected by the spit test, that is, simply wiping a little saliva over the valve-cap. Sometimes the valve plunger projects, so that when the cap is applied it is forced down. If it is cut off short, however, the tire-gauge will not register. Sometimes the valve is dirty or gummy or the spring is caught. Unscrew it, using the top of the cap as a screwdriver, and wash it with gasolin. Sometimes the valve leaks around the screw-thread. A little vaseline will remedy this defect, although it is likely to gum up the plunger later.

At home or in the garage, valve leaks are best detected by turning the wheel so that the valve-stem projects directly downward and then inserting it into a small test tube or vial containing gasolin. Always carry a few extra plungers in reserve, but not more than for the extra inner tubes necessary, as the plungers deteriorate. When one is found defective, throw it away, so that no one can find it again; and, in buying at garages on the way, be sure that a mechanic does not sell you a plunger that someone else has discarded.

Miscellaneous Causes of Leaks

I have had one tire that blew, not out, but off the rim. Such an accident seriously injures the inner tube. It results from an original defect either in the tire or the rim. An inner tube may chafe in its carrier. To prevent this, deflate thoroughly, fold three times, smoothly, cover with an old stocking, arrange the valve-stem and metal piece pointing outward, then inclose in paper or rags, and now insert into the regular carrying case. Two inner tubes may be put into such a case if care is taken that the metal parts do not chafe the other tube. Never carry extra inner tubes in the original pasteboard boxes. An inner tube may also gradually puncture against a rough seam in the outer tube or against grit or caked talc.

If partially inflated, as previously mentioned, before inserting and if reasonable care is taken with tire-irons there is little danger of injuring inner tubes by removing and replacing tires. If, when an inner tube is removed, it shows markings, look for the cause on the inside of the outer tube or the rim. For example, a hole in the rim may be filled with putty or also a rough seam may be covered with a piece of cloth or a rubber patch, or a ridge may be rubbed down.

One of the meanest leaks is due to separation of the valve-stem from the inner tube. This can usually be detected, like any small leak, only by immersion in a tub; or, rather, if it is easily detected, it is difficult to repair it. If the leak is small, unscrew the parts holding the valve-stem and slip a patch over the stem, making the hole in the patch as small as possible. Do not try to use a gasolin patch for this purpose, but use cement, freshening opposed surfaces with sandpaper and gasolin. Screw the parts down on the valve-stem while the cement is fresh and hold the edges down until the cement has set.

Emergency Outfit

Remember that your leak may occur in the mud and after dark. Be sure to have some available source of light. If you have a storage battery, a trouble-light is easily arranged for, and it may be carried in a mailing-case. If not, you cannot very well keep your engine going to run your light during the time occupied in repairing a leak. A pocket-light or one-dry-cell lantern will answer fairly well. At least make sure that you can unscrew a kerosene lamp. Always keep overalls or an old suit of clothes in the car, also rubbers; besides an old piece of rubber sheeting or oil-cloth or, at least, a few newspapers to put down on the dirt. Besides the ordinary outfit, you will often need a third tire-iron, for a stiff tire, and two forceps, with which to separate the two parts of the dustcap. Then, sandpaper, a bottle of gasolin, extra patches, cement, clean rags, blowout patches, brush, talc, and tire-dough will be needed; also a large round nail or some similar piece of metal for applying the tire-dough and for cleaning cuts in the outer tube.

Inclose the gasolin and talc in mailing-cases or some similar strong box, to prevent breakage and leakage, and assemble all necessities for this work in one receptacle, such as an old satchel or large box. Put all parts where they cannot get lost or blown away or stepped on, or, if you have plenty of passengers, make each responsible for a set.

General Hints as to Repairing Tires

Solutions of rubber (?) are sold, with the idea that by weekly applications with a brush the wear of the outer tire may be compensated. You will probably buy only one can, and what is left of this may be used on a fence. Gasolin vulcanizers are good for repairing inner tubes. I have never succeeded in vulcanizing scrap raw rubber into holes in outer tires. Unless for a tour, vulcanizing

should be done at home, simply changing inner tubes on the road or using gasolin patches.

In vulcanizing over a large hole or long cut, where patching is not practicable, be sure to introduce talc within the tube to prevent sticking of opposed surfaces. This is not likely to occur in case of a small puncture, where the vulcanizer is used as an alternative to the gasolin patch. If, however, the talc has been forgotten or neglected because the vulcanizer has been sold with the assertion that it is unnecessary to introduce talc, the stuck surfaces can usually be worked apart by rubbing and picking under moderate inflation. Cement will be used for patching around a valve-stem to close, watertight, a hole through the outer tube, and for setting tire-dough. It is not usually wise to spend too much time in using tire-dough for small cuts that do not penetrate to the fabric. Tire-dough is excellent, however, for repairing deep cuts and lacerations into which the finger can be introduced.

The secret of success lies in thorough cleansing with gasolin, applied on a fine rag over the end of a blunt nail or similar piece of metal. Be careful not to puncture the inner tube. Wipe until the rag comes out clean. Then squirt in some cement and work in the tire-dough, previously softened with gasolin to the consistence of masticated chewing-gum or putty, using the nail to squeeze it in, and finally patting and rubbing down with the blade of a knife—a spatula-blade being superior.

It is better not to run the car till the cement has set. This, of course, does not help the fabric, but simply keeps out foreign bodies and water. If the hole in the fabric is more than a stone prick or small nail hole, insert a canvas patch. For large tears in the fabric, use a patch from an old tire, as described.

Tire Conservation

The writer is not particularly impressed with the idea that a puncture through the outer tire leads to rotting of the fabric from admission of water. Blowouts may appear at other places, while the fabric around an old puncture remains intact. In dry weather, the tire is likely to be used up before rotting occurs, but in rainy weather and in spring, while only a few miles a day are run, rotting from dampness is a serious factor.

Neither is underinflation, not of a degree to be easily observed by inspection or kicking the tires, a noticeable cause of de-

preciation. A writer in *The South African Medical Journal* tells of good mileage made at an average pressure of 45 pounds instead of 60, with much running over roadless regions. Neither do tires heat noticeably or increase the pressure by rapid running. An old or weak tire should not be inflated to within 10 pounds of the standard pressure. Overinflation, which is common with storage tanks and at the hands of mechanics, may rupture the fabric in a moment. No garage-man will admit this, but he will ascribe the subsequent short mileage to underinflation. However, it is wise to maintain the standard pressure for new tires and to test—and inflate if necessary—at least every week; using the tire-gauge, and allowing one pound per stroke of the foot- and hand-pump and watching machine pumps or tank pressure carefully.

Overloading is a marked cause of tire wear. Passengers do not realize this fact and are prone to consider that the number of persons and suit-cases that a car can carry is limited only by bulk. Overuse of brakes is also a considerable factor. Remember that the brake ultimately acts between the rear tires and the ground and that, if the wheel slides from sudden braking or because it cannot hold against mud or ice, the tire is being shaved down. The effect is immediately visible. There is so much less rubber to protect the fabric and the latter has also been strained and heated.

Wire wheels are said to diminish the strain on tires. The only objection to them is initial expense and difficulty of cleaning. Shock-absorbers and graphite and oil between the leaves of springs save the tires just as much as they do the riders—perhaps more, because the tires are being hit between the ground and the heavy weight of the car.

A small clincher-tire can be removed as easily as a demountable rim. A detachable wheel saves time on the road, but the ultimate

repair of a tire must be made sometime and by somebody. If you do the work itself, you lose whatever additional time is necessary in changing wheels. Covers for outer tires, interlinings, extra-weight inner tubes, and the like may lessen the danger of actual leakage of air at any given time, but, on the whole, they cost more than they save in mileage.

Alinement of wheels is an important matter in saving tires. Unless there has been a collision or heavy jar, the rear wheels do not easily tend to get out of alinement; on some cars, the front wheels do so very readily, require frequent measurement between the front and back of the circumference of the rims, at the level of the axle—which requires more skill and training than appears—and adjustment of the rod governing the distance. This is particularly true of cars stamped out like coins. Alinement should be tested by a reliable mechanic shortly after purchase and after any collision or strain or, if the ball-and-socket joints rattle at all.

A Suggestion

In conclusion, it may be suggested that it is better to get an average of 4000 miles from tires, and have comfort, than to get 5000 miles, with constant worry and effort. Do not believe all the statements made by professional advisers of motorists, nor waste too much money in buying devices supposed to prolong the life of tires. Do not try to squeeze a few miles extra out of a tire, and damage an inner tube, besides giving yourself the work of an additional removal of a tire. I have done this twice, gaining 10 miles, 2 1-2 cents, and losing a patch in one case; gaining 2 miles, 1-2 cent and spending 50 cents for vulcanizing a split inner tube in the second case. This is not economy, not even successful stinginess.

(To be continued.)

I LOVE to see enthusiasm. A man should be enthusiastic about that in which he is interested. I would not give two cents for a man who works for money alone. The man who doesn't get some comfort and some enthusiasm out of his daily work is in a bad way. Some men are almost irresistible—you know that. It is because enthusiasm radiates from their expression, beams from their eyes, and is evident in their actions.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

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[Continued from page 233, February issue]

AS a cause of extreme wasting of infants having diarrhea and vomiting, Keller has suggested *acid intoxication from the intestines*.

Diarrhea is sometimes associated with an increase of intestinal decomposition. Hanot and Bouchard looked upon the enlargement of the liver, which frequently accompanies chronic dyspepsia, as a result of intestinal intoxication; founding their theory on animal-experimentation by Boix, who claims he produced *cirrhosis of the liver* by giving, for a prolonged time, food containing acetic acid and butyric acid.

Chlorosis, and certain forms of *anemia*, are, most closely of all blood diseases, related to decomposition in the intestines. It is well known that chlorosis is often accompanied by a tendency to constipation, and this symptom—or rather the hypothetical decomposition process which attends it—is, according to many authors, the fundamental cause of the disease.

We must also admit the clinical coincidence of gastrointestinal wrongs with *skin eruptions*.

The nervous system displays most of the highly varied symptoms that clearly result from intestinal decomposition. At one end of the chain, there is simple headache, and at the other end stand coma, convulsions, collapse. The most common forms may be considered under these headings: First, the general phenomena common to severe constipation; second, tetany; third, epilepsy or eclampsia; fourth, psychoses.

Included in the general phenomena observed in severe constipation are the nervous symptoms which accompany *chronic*, or habitual, constipation—an out-of-sorts feeling, headache, lassitude, neuralgia, giddiness, ill-humor, and so on. *Tetany* is doubtless due to decomposition in the stomach. *Epilepsy* and *eclampsia*, having been sometimes associated with marked acetonuria, Von Jaksch and Lorenz and others have ascribed their cause to intestinal auto intoxication. As for *psychoses*, there has been much discussion lately, especially in France, anent the connection between it and intestinal decomposition, and out of this has sprung the generally accepted doctrine of "visceral psychoses."

We often see patients complaining of debility, who tire easily, are irritable and despondent, yet, in whom we can detect no organic disease. Nevertheless, their symptoms and their dusky complexion point unmistakably to auto intoxication—effete matter in the blood in excess. The lips are blue, the features blurred (like an indifferent photograph), while little arterial twigs can be seen on the cheeks and nose, suddenly piercing the skin and pervading its surface, their distended condition telling of arterial fulness. The arteries are usually thickened and sometimes are hard, the blood pressure being increased. The heart is often enlarged; being hypertrophied or dilated. The urine shows a high degree of acidity and a large amount of indican. The bowels are usually constipated or they may, at times, be irregular, as the muscular fiber of the bowel shares in the malnutrition of all the muscular tissues. Flatulence is not rarely also present; and this adds to the disturbance of the heart, producing palpitation, breathlessness, and nervousness.

After many years' experience in the treatment of chronic diseases, I am of the opinion that no chronic disease can be successfully treated without a great deal of attention being given to the gastrointestinal tract and to the eliminative organs generally. The bane of sedentary life and the principal cause of chronic diseases—more important even than pyorrhea or pus in the tonsils—are visceral inertia, constipation, and auto intoxication.

Gout, arthritis deformans, psoriasis, the socalled diseases of metabolism generally, are all aggravated, if not directly due to the above-mentioned conditions. What is diabetes? A disease due to dangerous disturbance of metabolism. Its treatment? Proper diet. What is Bright's disease? Crippled or overworked kidneys on a strike, caused in the majority of cases by excess in eating—especially of the proteins—worry and pessimism; and its remedy, as well as prevention, is: less flesh, less fret and fume, and more fruit and fun.

In the granular kidney, it sometimes is a question whether to call the disease gout or Bright's disease. The theory that the minute

blood-vessels supplying the kidney are plugged up with bacterial emboli—that nephritis is purely an infective process—may be true, but I believe that renal degeneration may be a consequence of long-continued elimination through the kidneys, of products of faulty digestion.

If these products are cast out of the blood, the kidneys suffer and become granular; if they are retained in the blood, they may set up gout or arthritis deformans; in many cases, both the kidneys and the joints are affected. According to the stage of the malady, we might speak of the "liver being at fault" or of "renal inadequacy" in the early stages; or "this is a beginning arthritis deformans," or "the arteries are atheromatous," or "the kidneys are diseased," or "there is gout," or "arthritis deformans" or, finally, "chronic nephritis" is present, according to the prominent state or the point from which the complex pathological process is looked at. One doctor might choose one phase, another prefer another, and each be right. Consequently, when I hear that such a person has "Bright's disease," I begin to speculate, "what is the matter with him?"

The condition of the gastrointestinal tract, elimination, diet are all such important matters in the successful treatment of chronic diseases that you will bear with me, I am sure, if I devote considerable space to these subjects before taking up the treatment of the various chronic diseases.

The Problem of Diet

As soon as we have accepted—as we must at the outset—the scientific (and, as well, the moral) dictum that "so much of food and drink is to be administered to a patient as will refresh and not oppress the powers of the body," we are at once confronted by what appears to be an impossibility, namely a correct estimation of the different nutriments and their respective digestibility, in addition to the digestive capacity of each individual.

But, at this point we must remember that the practice of dietetics rests upon the accumulated experiences of mankind, that it is not a new problem to be solved by a series of algebraic equations, but that much of this knowledge has already been made available for us through a long acquaintance of the human mind with its practical aspects; and, furthermore, that out of this ages-long familiarity there has emerged a first and all-important law for our guidance, which law is that enjoining temperance—a word which stands for the affirmative "enough" as

strongly as it does for the negative "*not too much*." However much in the dark we still may be as to the proper course to steer between these landmarks, we do know that the landmarks are there; and this is the first essential step toward finding them, even though we already know that their positions in the life-stream vary with the passing of every vessel between them.

To begin the consideration of this question at its logical basis, we should doubtless understand, as a premise, that the subject of diet neither stops nor begins with the individual, but that the life of the race is alone the proper criterion, and that only the future can speak with authority of any present deviations from such rules of diet as have been established by our fathers by testing, rejecting, adopting. For, it has already been shown that a diet that may make for a seeming full vigor and well-balanced living in one generation may not, in actuality, suffice to carry on the germ of full vigor to the next generation. Of course, it would appear, at first glance, that a vigorously nourished organism would be better able to procreate its like than will an organism of inferior energy; but, experience demonstrates that the vigor of the parent cell, the germ-cell, may be something quite different from the vigor of present living tissues and organs; the latter merely exhibiting in detail the powers peculiar to each, while the parent cell combines and concentrates within itself the potencies of a whole organism. Consequently, it is anything but an unusual occurrence for the physically and mentally weak to spring from the loins of the apparently physically and mentally strong. That science cannot escape or evade these fundamental facts, adds immeasurably to the complexity of the subject of dietetics; for, it is food that has formed the soil from which all men have sprung, be they weak or strong.

The Amount of Nutriment Needed By the Body

The lowest estimates of the food necessary for the human body put the proteid required at about 29 Grams. In order to supply the calories required for the various vital processes and to make up the loss of heat by evaporation and radiation, there must be consumed about 50 Grams of fat and 300 Grams of carbohydrates. Although every Gram of fat is, theoretically, worth somewhat more than 2 Grams of carbohydrate, there is so much lost, through natural lack of digestive power, when the limit of 100 Grams of fat is reached, that this ratio fails; and a ration of

150 Grams of fat is attended by great waste and also by disturbance of the digestive and absorptive power in general, while in addition there is the possible danger of poisoning from fatty acids and the formation of acetone. Therefore, leaving out water, salts, iron, and the like, the organic requirements of the body must, actually, amount to much less than 500 Grams of water-free chemically pure proteid, fat, and carbohydrate; and this allows for reduced oxidation in disease, and a liberal supply of external heat and use of clothing, to preserve the internal heat.

Now, the first point in combining a diet (taking for granted this knowledge of the average needs) is, to ascertain the previous feedings and habituations of the patient. There is evidently something that he has been taking that should either be stopped or modified; though this does not always follow. As a rule the articles of diet that come in for prohibition are the semimedicinal ones, principal among which are: (1) Alcoholic beverages, tea, coffee, chocolate, tobacco, spices, vinegar; (2) foods that are too hot or too cold; (3) those containing oxalates or other toxic chemicals; (4) those rich in purins; (5) foods tainted and fermenting or rancid (6) those containing excess of innutritious substances; and (7) those which, though good in themselves, would work against a proper metabolism in this particular person.

Write Your Dietetic Prescriptions

It is as necessary to follow the plan of a written prescription in dietetics, as it is in drug-therapy, bringing the formula into terms of proximate principles. From the practical standpoint, these include water, sodium chloride, iron, iodine (as in thyroid extract, lecithin); the three organic nutrients proteid, carbohydrate, fat; and gelatin, as a substitute fuel-food. In theory, and to some extent in practice, the following must also receive consideration: calcium, magnesium, potassium, sulphates, phosphates, purins, and extractive matters generally; and besides these, as more or less inevitable accompaniments of raw-food materials, various toxins and innutritious substances. Unless we are dealing with a lack to be made up, as in anemia, or with a surplus to be taken off, as in obesity; or, unless some particular metabolic disorder, such as diabetes, makes bad that which is usually good, the prescription can be formulated approximately in the following terms, whatever the character of the disease:

Water, 2500 Cc. (about 2000 Cc. as such, or at least in the form of some watery beverage):

Salt, 10 Grams;

Iron, 10 centigrams;

Proteid, 50 Grams, or even as high as the earlier standard of about 100 Grams;

Carbohydrates, 300 Grams;

Fat, 50 Grams. (The two last mentioned being interchangeable, within limits, in the ratio of about 2 parts of fat to 1 of carbohydrate, while gelatin may be substituted for carbohydrate up to about 50 Grams, in even proportion.)

With reference to the vicarious function of fats and carbohydrates, there is never any need of eliminating such amounts of fat as are present in ordinary foods without being recognized as such, as, for example, the 1 percent that is in skimmed milk, the 2 percent in fish, the 6 percent in breakfast foods, the 9 percent in crackers, and so on; percentages which make it possible to give as much as 50 Grams in a diet that the laity suppose to be fat-free. Of this invisible fat, it is difficult to avoid giving as much as 10 Grams, while 30 to 50 Grams can readily be added by inunction (although we cannot be certain of its being assimilated).

About all of the ordinary foods contain, as I have pointed out, the three organic ingredients in different forms and proportions, from which fact arises the difficulty of deciding upon the amount to be administered of the respective foods; there being likely to occur in some of them too many or too few of some one or more of the ingredients. But, by restricting ourselves to a certain number of foodstuffs, we may make up the proportion in accordance with the following general law: When the number of independent equations equals the number of unknowns, the latter can be determined. When these equations are actually worked out, at least one of the unknowns is likely to become a negative quantity; for, while we can always determine algebraically the quantities of certain foods required, the practical result invariably indicates that there should be subtracted from the dietary such an amount of proteid, fat, and carbohydrate as is contained in a certain amount of one of the foods; and this is, of course, impossible.

Therefore, in transposing a primary prescription of proteid, carbohydrate, and fat into nature's approximate galenicals (the natural foodstuffs or even proprietary foods), we must proceed by rule of thumb. For example, let us take the proteid ration, which cannot be replaced by carbohydrate or fat and is the most definite of the three.

If we use pure proteid or lean meat or meat-extracts or even milk, all of our raw material will be exhausted in administering the proper ration, without going further than a beginning on the requisite quantity of carbohydrate together—although in milk the proportions of proteid and fat are so nearly equal that it is easy enough to furnish sufficient fat with the proteid. Thus, the difficulty is, to give nearly pure carbohydrate or mixtures of carbohydrate and fat for the remainder of the mixture; for, while theoretically this is easy, since we have olive oil, butter, clear salt pork, and the like, as well as the various sugars and syrups, such as corn-starch, sago, tapioca, and the like, in practice such a diet rarely proves tolerable. In the cereals, including breadstuffs, there is a nearly correct proportion between proteid and carbohydrate, the ratio being from 1.4 to 1.7, and it is easy to add a little sugar or butter, and the like, to such a diet. There is probably no natural foodstuff which contains the proper proportions of all three of the organic ingredients for an adult, and none that is tolerable that contains the required amount of fat and carbohydrate to add to a food disproportionately rich in proteid.

Meat Is Necessary

For the ambulant patients, as well as for most others, some meat is required, not only empirically, but to take up the iron. In the vegetable foods, the iron content is too small, as a rule, though many stems and leaves contain variable quantities. But such iron-containing vegetables are often contraindicated by reason of their lack of organic nutrient, as well as for their difficulty of digestion and liability to fermentation, holding, as they do, large proportions of cellulose; and, though iron may be added in the form of hemoglobin or some derivative of it or in organic form, we cannot determine how much of it is assimilated. Therefore, in practice, we usually find it difficult to administer enough meat-proteid to provide for iron without increasing the ratio of iron in the dietary. There is not, and probably there cannot be, a strictly scientific, mathematical method of determining the ration needed.

Our Food Estimates Empiric

Such estimates as we have are based on empiricism, the diet being gradually reduced or increased until equilibrium between nitrogen and weight have been secured, at least approximately. Chittenden's method was, to find how little proteid could be given

without apparent loss of tissue. He made no attempt to reduce the bulk or the content of fat and carbohydrate of the rest of the food. But Voit and chemists generally have measured the consumption of food as regulated by a diet moderately restricted. The extreme lack of proteid, and, consequently, of tissue oxidation, as secured by Chittenden's method, seems to have decreased the output of heat and energy in the body, thus diminishing the call for fuel-foods. As yet it is a question which of the two rations is the more hygienic.

The dosage of food, as of medicine, depends on the size of the body, and, therefore, indirectly upon age, sex, and so on; so that with growing children there is a disproportionate need of the depositable food ingredients (proteid and fat) as compared with carbohydrate, which latter cannot be stored in quantities larger than about 250 Grams. Though there is scarcely an analogy of this in the dosage of drugs, there are in their effects idiosyncrasies similar in character. As a given remedy may produce results either much beyond or much short of those intended, so it may be with foods, an obese patient often retaining his fat on an abstemious regimen, while the diabetic, let him eat what and as much as he can, will grow thin. Of course, in all cases the state of the patient's digestion and absorptive powers is a factor which must be closely taken into consideration in arranging his diet.

In administering food, there is no very close analogy to the cumulative effects obtained by the administration of the alkaloids, for, the active organism is capable of ingesting and assimilating a large excess of the various organic foods without giving much evidence of damage; though there may be mechanical effects of a dangerous nature, such as intoxication due to products of decomposition by microorganisms, or poisoning by strictly toxic substances (as purins and oxalates) and toxins arising from bacterial or other chemic change before ingestion.

Food Dosage and Drug Dosage

Though it is true that we cannot always secure the reaction between drugs and the tissues that the prescription is intended to produce, we can generally manage to give in some way the full dose desired, except in the case of drugs acting locally on the alimentary canal, while the dietetist is often unable to administer an adequate dose of food in any manner, especially in the most serious and acute cases; and this difficulty almost always

obtains when, whatever the reason may be, food can be introduced neither by mouth nor by a gastric or superior intestinal fistula. There can never be introduced more than a small part of the organic ration by way of the skin and subcutaneous tissues, and, though it is often mechanically possible to introduce a full ration into the lower bowel, we practically never can secure the retention, for a satisfactory time, of over half the ration during a period of two or three weeks. Even when this half ration is retained satisfactorily (which often it is not, on account of faulty technic), absorption is always deficient and assimilation more than unsatisfactory. Therefore, these and all other like expedients for feeding must be clearly recognized as make-shifts from which not too much should be expected.

The difference between the food requirements of the healthy and active body and those of the diseased is, of course, great, and experiment will probably never be able to adjust it with scientific accuracy, though it

can do much. We know that in certain stages of certain cases of diabetes there is an enormous oxidation of proteid of food and tissues that is clearly not purely compensatory of the failure of sugar oxidation, since it generally can be reduced nearly or quite to the normal by decreasing the ingestion of carbohydrate. But we do not know just how far increase of oxidation in hyperpyrexia compensates for or exceeds the oxidative demands of exercise, nor what influence antipyretic measures, such as light covering in a cool room, bathing, sweating, and the like, have upon the calories needed; neither do we know how far the demand for proteid is modified by the various febrile diseases. Probably the safe rule is, to give nearly the full ration for about every disease, when this can be done, excepting in conditions which render it possible to disregard nutrition altogether for the time being or where there is an obvious indication to reduce one nutrient to another.

(*To be continued.*)

Vaccine and Serum-Therapy in Everyday Practice

III. Therapy and Rationale of Vaccine Therapy (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from page 245, March issue.]

Methods of Administering Bacterins

BACTERINS are administered by injecting the liquid into the subcutaneous areolar tissue by means of a hypodermic syringe. I insist that an all-glass syringe, with a perfectly fitting glass plunger ground into the barrel—so that no packing of any kind, not even of asbestos, is necessary—should be employed, rather than a syringe with a rubber or leather piston. Personally, I should never feel safe in using one of the latter variety, for fear of producing a “hypodermatic abscess.” With an all-glass syringe, perfect asepsis is easily secured. A platinum needle is to be preferred to one of steel, for the reason that the salt solution in which the killed bacteria are suspended in a bacterin soon corrodes steel needles, while it does not affect the platinum at all. I myself use an all-glass syringe of 2-Cc. capacity, with platinum needle. My platinum needle is one and one-half inches long, and seems to

me to be particularly suited to this work. The needle should be of the “slip” variety, into which the tip of the glass barrel has been ground, so that a perfect fit is secured without the use of threads, rubber or leather washers, gaskets, or the like. All these precautionary measures make for strict asepsis.

Always, *before and after* making an injection, I fill the barrel of the syringe with alcohol and eject it through the needle; I then thoroughly rub the needle with a piece of gauze or wad of cotton saturated with alcohol. Next, the patient's skin is thoroughly cleansed with alcohol at the proposed site of inoculation; if visible dirt exists on the skin, soap and warm water should precede the alcohol wash. Under some circumstances, just before inoculation with the bacterin, the skin is finally painted with tincture of iodine. The needle is inserted for about one inch, and then it is withdrawn about half this distance before the injection is made, so as to avoid the chance of injecting the bacterin directly into a vein. The dose of the

bacterin should be injected into the subcutaneous tissues, and *not* intramuscularly; the reason being that the connective-tissue cells have the power of antibody production in a much greater degree than that possessed by the muscle-cells.

In administering large doses of bacterin, I believe it is better to divide the dose, making the injection into two or more sites, rather than to inject the entire portion at one point. In this way—that is, by dividing the dose and injecting at several points—the local reaction at the points of inoculation will be less severe; also, personally I believe that a greater immunizing response is thus obtained.

In adults, the inoculations are usually made at a point over the insertion of the deltoid muscle, on the outer aspect of the upper arm. In children, I usually inject the bacterin into the subcutaneous tissues of the buttock; one reason for the choosing of this latter site is, that the child, when turned face down across its mother's lap, cannot see what is being done; another is, that the tissues are looser here than in the arm of a child, making the reaction less severe at the point of inoculation.

As far as possible, in localized infections, one should choose the site of inoculation distal to the focus of infection, following the dictum of Wright that the newly formed antibodies may travel "upstream" along the lymphatic channels to the seat of war. Where this is impracticable, make the injection a little proximal to the infected focus in healthy tissues, so that toxins may be neutralized and the bacteria destroyed before they can gain access to the general circulation. In cases of appendicitis, peritonitis, puerperal sepsis, and so on, I make the inoculation about the middle of the inner aspect of the thigh. Always, for obvious reasons, avoid making injections over bony prominences or in the vicinity of large nerves.

It is a good plan to inform the patient, after you have made the first inoculation with a dose of bacterin, that quite probably there will occur, within about twenty-four hours, some redness and slight swelling around the point of injection, but that he need not be alarmed, as it is nothing serious and that it will subside within two days or so. Sometimes a small hard palpable nodule persists in the subcutaneous tissues for quite a while after the local phenomena have subsided, but this, too, eventually disappears.

Ordinarily no noticeable constitutional symptoms supervene upon the injection of a

proper-size dose of bacterin. Still, the temperature *may* rise a fraction of a degree, or even a degree or more, and the pulse become somewhat accelerated within a few hours after the bacterin is injected. Chilly sensations may be complained of and also a mild headache be experienced. These symptoms are the clinical evidence of the *negative phase*. Ordinarily they last but a few hours, while in the majority of cases are not experienced at all or in but slight degree. Then should follow the *positive phase*, in which the patient experiences a feeling of "euphoria" or well-being, and there is observable a pronounced amelioration of all the clinical symptoms of the disease from which the patient is suffering. The positive phase frequently comes on within from four to eight hours after the administration of the bacterin, but may not make itself evident for from twenty-four to forty-eight hours. The average time, in my experience, is about twenty-four hours.

Dosage of Bacterins

The size of a dose of a given bacterin, like that of a drug, depends upon a number of factors, such as age, sex, body-weight, idiosyncracy, and so on. But in general, the adult dosage of the bacterins in common use by me is about as follows:

| | | |
|--|--------------------|-------------------------------|
| <i>Staphylococcus pyogenes albus</i> | ..... | 100 millions to 1000 millions |
| <i>Staphylococcus pyogenes aureus</i> | ..... | 100 millions to 1000 millions |
| <i>Streptococcus pyogenes</i> | ..... | 30 millions to 100 millions |
| <i>Streptococcus erysipelatis</i> | ..... | 50 millions (daily) |
| <i>Streptococcus viridans and s. rheumaticus</i> | ..... | 50 millions to 500 millions |
| <i>Pneumococcus</i> | ..... | 20 millions to 100 millions |
| <i>Gonococcus</i> | ..... | 100 millions to 1000 millions |
| <i>Micrococcus catarrhalis</i> | ..... | 25 millions to 100 millions |
| <i>Bacillus coli communis (colon-bacillus)</i> | ..... | 20 millions to 200 millions |
| <i>Bacillus typhosus (typhoid-bacillus)</i> | (immunizing)..... | 500 millions to 1000 millions |
| <i>Bacillus typhosus (typhoid-bacillus)</i> | (therapeutic)..... | 100 millions to 500 millions |
| <i>Bacillus influenzae</i> | ..... | 50 millions to 200 millions |
| <i>Bacillus pertusis (Bordet's bacillus)</i> | ..... | 50 millions to 500 millions |
| <i>Bacillus of acne</i> | ..... | 10 millions to 100 millions |
| <i>Bacillus of Friedlander</i> | ..... | 75 millions to 300 millions |
| <i>Meningococcus (immunizing)</i> | ..... | 500 millions to 1000 millions |
| <i>Bacillus tuberculosis (nonvirulent)</i> | ..... | 100 millions to 1000 millions |

The foregoing figures represent the usual adult dosage.

The dose of a bacterin for a child is from one-fourth to one-half that for an adult, according to age.

In administering the *first* dose of bacterin, the minimum dose, as shown in the dose-table given above should be tried; then, if there is no response within twenty-four or forty-eight hours, repeat the dose, increasing it somewhat.

Bacterin Containers

The various biological laboratories are now putting out the bacterins in very convenient packages. In one form, the maximum dose is enclosed in a sealed glass ampule, with a label giving the number of millions of killed bacteria of each variety contained in it. These ampules ordinarily contain 1 Cc. This form of container is very convenient, and there is no chance of contamination from outside, as they are hermetically sealed. Their only disadvantage is, that, if one does not use the entire content of the ampule, the remainder is a loss.

In using the ampule package, it is first shaken, in order that all the killed micro-organisms may be put in suspension. The elongated neck of the ampule is then broken off, the needle of the hypodermic syringe is inserted into the ampule, the latter is inverted, and the dose desired is drawn into the syringe by slowly drawing out the piston.

Another style of bacterin-container is that in which the bacterin is sent out in a syringe, similar to, but smaller, than those in which antidiphtheric serum comes. They are quite convenient, but considerably higher in price than the package next to be described.

The third, and to me the most convenient and economical package, is a "bulk," or "tank," container of glass, with a rubber diaphragm across the mouth of the bottle. These containers are usually of a capacity of either 5, 10, 18 or 20 Cc. Outside the rubber diaphragm, there is usually placed a felt pad saturated with lysol or some other antiseptic; or, you are directed to place a drop of phenol or lysol on the diaphragm and then puncture the diaphragm through the drop of the antiseptic. If the syringe and needle have been properly prepared with alcohol, as detailed in a previous paragraph of this paper, and the precautions in regard to puncturing the diaphragm of the bulk package just described are followed, there is no danger of contaminating the contents of the container. And there is the very decided advantage of one's being able to withdraw the exact dose desired, without entailing any waste of bacterin whatever.

Consideration of the preceding papers of this series leads to the following conclusions:

1. The activities of the immunizing mechanism of the body consist, in the main, of the elaboration of *immune-substances*, or *antibodies* (opsonin, antitoxin, agglutinin, lysis, and the like), which may operate independently of, but more often in cooperation with, the phagocytes (polymorphonuclear leukocytes, large lymphocytes, and connective-tissue cells).

2. The opsonic index furnishes a fairly reliable guide in regard to the progress of a given infection and the establishment or non-establishment of an immunity; a high opsonic index, with regard to the specific bacterium (or bacteria, in the case of "mixed infections") responsible for the pathologic process, being, in general, a favorable indication.

On the contrary, a persistently low index indicates that the immunizing mechanism is not being adequately stimulated or that the tissues are unable to respond to such stimuli. It is essential that these stimuli (doses of an appropriate bacterin) shall be administered in correct dosage, both as to size of dose and as to proper intervals; otherwise, the index will be sometimes high, sometimes low, with corresponding fluctuations in the clinical condition of the patient. However, we have also learned how intricate a procedure is the estimation of the opsonic index, which makes its employment by the general practitioner an impossibility; and that the clinical picture is, after all, probably as reliable a guide as the cumbersome opsonic index.

3. At the infected focus or foci, there exists a condition which Wright has termed "lowered bacteriotropic pressure"; by which is meant that there is, at the infected focus, a local deficiency in antibodies. As a specific example, we may say that in a case of typhoid-fever the tissues comprising and surrounding the Peyer's patches in the intestine, the rose-spots and the splenic pulp, may be almost completely devoid of the specific *typho-*agglutinin and *typho-opsonin*, while there may be present in the tissues just named an adequate quantity of *strepto-* and *staphylo-*antibodies.

Causes of Failure in Bacterin-Therapy

Stimuli, in the form of (a) toxic products of bacterial activity at the infected focus, or (b) a suitable bacterin injected hypodermically may reach healthy tissues and result in the production of large quantities

of antibodies. Yet, these antibodies may be unable to gain access to the seat of warfare, because of the formation of a "pyogenic membrane," or dense leukocytic wall, surrounding the focus or foci of infection. Again, in the case of a meningitis, the high intracranial or intraspinal pressure may, and does, interfere with or prevent the determination of the immune substances to the place where they are most needed. Here, lumbar puncture and the withdrawal of cerebrospinal fluid, to relieve tension, is indicated.

In the first instance, just cited, where there is a circumscribed collection of pus, or, in other words, where there exists an abscess, the proper procedure is, to evacuate the pus by incision and drainage; then loosely to pack the cavity with strips of gauze wet with Wright's solution (sodium chloride, 5 percent, and sodium citrate, 0.5 percent, in sterile water), and apply a dressing kept wet with the same solution. This results in a copious outpouring of serum, which washes away the detritus of the battlefield (consisting of bacteria, their toxins, dead and dying leukocytes, and the like), as well as bringing a fresh supply of antibodies to the scene of the contest.

In *chronic* abscesses, there may be such a dense "pyogenic membrane," consisting of coagulated serum, necrotic or seminecrotic tissue, and exhausted leukocytes, that recovery cannot take place until the walls of the abscess have been lightly curetted and the cavity packed and dressed, as outlined in the preceding paragraph. It must be understood, however, that I do not advocate this procedure in *acute* abscesses, where the result might prove disastrous. It should be employed *only in chronic cases*.

Where there is a known or suspected excessive coagulability of the blood, citric acid, in doses of 1-2 to dram, by mouth, three times a day, is indicated. This has often proved to be a measure of great value to workers in the field of bacterin-therapy.

Again, an ischemia, or local circulatory deficiency, may prevent a free flow of antibodies to the infected focus. In this case, the application of a hot-water-bag, or of hot fomentations, or the production of Bier's hyperemia by means of an elastic bandage applied proximal to the seat of infection, is indicated.

When the leukocytes are deficient in number (leukopenia), despite the existence of an infection and the injection of a bacterin, a leukocytosis may be induced by the hypodermatic injection of a cubic centimeter of a

5-percent solution of sodium cinnamate in sterile physiologic saline solution. However, this method results in the sudden output of large numbers of leukocytes from the "factory" in a somewhat immature state, and whose phagocytic powers may not be fully developed. Nuclein, administered hypodermatically, also has a reputation as an inducer of leukocytosis.

In infections of the peritoneum, either local or diffuse, bacterin-therapy has, in my hands, yielded results that, to me at least, were almost marvelous. But these results were attained only when the bacterins were used in conjunction with other appropriate measures, such as free drainage, the Fowler position, and the continuous administration, per rectum, of physiologic saline solution (or, in some cases, of hypotonic salt solution, or even plain tap-water), drop by drop (the socalled Murphy drip).

The Murphy Drip, or Continuous Proctoclysis

This continuous proctoclysis is a remedial measure of untold value, when once the rationale of its action is properly understood. Some of the solution is absorbed by the blood- and lymph-vessels of the rectum and colon, keeping the blood-vessels well filled, with the result that the absorption of the products of bacterial activity is reduced to a minimum. Next, it stimulates all the organs of excretion and aids them in their efforts to eliminate toxic substances from the body. Another portion of fluid introduced into the bowel passes through the intestinal wall by osmosis and enters the peritoneal cavity, where it dilutes the pus, washing the latter out through the drainage-tubes and rendering less concentrated any pus that may unavoidably be absorbed. Postoperative thirst is also relieved by this proctoclysis.

The Murphy drip has a wide range of uses other than in infections of the peritoneum. In pneumonia, it is often a life-saver, when employed in conjunction with the administration of a suitable bacterin and active-principle medication. Here, however, we are confronted by a condition of chloride retention, so that, theoretically at least, plain tap-water is indicated for use in the "drip"-apparatus, rather than the commonly used physiologic saline solution.

Besides the uses for continuous proctoclysis by the drop-method outlined above, it is of value wherever the system is overwhelmed by a flood of toxins. However, one precaution is to be observed, namely: that, if the employment of this most excellent

measure be abused, the kidneys may break down under the strain of eliminating excessive quantities of fluid.

Dosage of Bacterins

The size of the dose of a bacterin may be too large or too small, and the result, consequently, be disappointing. In my experience, too small doses are employed more often than too large ones. Especially has this been true in the bacterin treatment of whooping-cough, the clinicians who used large doses reporting eminently satisfactory results, while those reporting failures invariably had employed doses too small to be effectual.

In acute conditions, where we have an active infection and virulent microorganisms to deal with, the doses of bacterin should be comparatively small; while in chronic infective processes, where the bacteria have to a certain extent lost their virulence and the tissues have become habituated to the stimuli emanating from the focus of infection, so that the tissues no longer respond to these stimuli by the formation of antibodies in adequate amount, then large doses of bacterin must be administered; and these should be progressively increased until an adequate response is obtained or until it becomes evident that favorable results are not attainable from this line of treatment.

Again, the intervals between doses may not be properly spaced. As we remarked when considering the "negative-phase question," the doses of a bacterin must not be administered so close together that the result is a *cumulative negative phase*. It is an axiom of bacterin-therapy that after administering a dose of a bacterin you must wait until the resulting slight negative phase has passed, and the *positive phase* supervenes, before repeating the dose. The advent of the posi-

tive phase, as has been said before, is shown by an improvement in the clinical symptoms and by a feeling of physical wellbeing apparent even to the patient himself.

In acute conditions, small doses, repeated every other day, or, in urgent cases like pneumonia and septicaemia, every twenty-four hours, until improvement is manifest, should be employed. In chronic infections, the interval between doses should be from three to seven or even ten days, according to results attained.

In infections caused by the tubercle-bacillus, exceedingly small doses of tuberculin or of tubercle-bacterin are to be employed, at intervals of ten days to two weeks, the size of the dose being cautiously increased, but ever remembering that a focal reaction is to be studiously avoided. I have had but limited experience with the treatment of tuberculous troubles by means of bacterin therapy, hence, would refer the reader, for more detailed information on the subject, to the writings of men specializing in this particular field of endeavor.

Finally, the use of a stock bacterin may result in failure to attain the greatly to be desired results, while an autogenous preparation may bring about a brilliant cure. At other times, the autogenous bacterin, for reasons presently to be detailed, may fail ingloriously; while a mixed stock bacterin of polyvalent strain often gives strikingly satisfactory results in the very case in which the autogenous has failed.

This brings us to another of the vexed questions of bacterin-therapy, namely, the comparative virtues, advantages, and disadvantages of autogenous and stock bacterins. Over this question, there has been a long and bitter controversy; but I believe we are finally beginning to see the light.

Puerperal Eclampsia

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THE best way to treat puerperal eclampsia is, not to let it happen. And, the preventive treatment of this condition—so dreadful in its development—is so simple and practical that there is little excuse for any physician having eclampsia occur in his practice. Furthermore, when it does occur, there is little excuse for a fatal termination of the attack.

To many readers, I am sure, these two statements will seem altogether too sweeping. No doubt in some rare cases the convulsions can not be prevented, and also on rare occasions one meets cases in which the toxemia is so great that death is inevitable; still, I have demonstrated in my own practice extending over a period of more than a quarter of a century that the two foregoing assertions

are substantially true. Furthermore, there are hundreds of obstetricians all over this country whose experience but confirms my own. In the past fifteen years, I have had no cases of puerperal eclampsia where I had the opportunity to treat the existing albuminuria for at least one week before delivery.

Within the period mentioned, all the cases of eclampsia occurring in my practice have fallen into two classes; namely: those in which the woman had not been under a doctor's care at all, and those in which I saw her in consultation and she had received the ordinary treatment for albuminuria. Out of all these victims, only one died, and she a woman who was far advanced in Bright's disease before the pregnancy occurred.

The Two Important Remedies

The main factor in my treatment of albuminuria is, the pushing of *digitalis* to the physiological limit; and I may add that for this method of treatment I am indebted to the late Prof. Alfred L. Loomis, of New York. Next, in developed eclampsia, my sheet-anchor is *veratrum viride*; and I owe thanks to Prof. Lapthorn Smith, of Montreal, for having inspired me with the courage to use it in the enormous doses necessary to bring success.

It is fit to emphasize that in the use of both these potent drugs success depends entirely upon their fearless dosage. In comparing notes with those who claim to have been disappointed by this therapy, I have invariably found that they had been too timid as to dosage. That also was my own experience at first, before having learned to use these drugs boldly.

It goes without saying, of course, that when we are giving large doses of such powerful drugs as digitalis or veratrum we must take certain precautions and exercise a degree of supervision adequate to secure the patient against poisoning. I have seen three cases of such poisoning, one with digitalis, and two with veratrum, and in each the doctor in charge had failed to appreciate fully the power of the drugs he was using. None of these three cases ended fatally, still, all were sufficiently grave to emphasize the need of caution.

Evidently, it is necessary to adopt some procedure calculated to insure the patient's safety; and such will be found the one outlined below—a course which, if followed, not only is perfectly safe, but the results from which are so brilliant that the practice of

obstetrics is robbed of at least one of its terrors.

The essential feature of this treatment consists in beginning with a dose that is safe for any patient, and thereafter, under very close and scrutinizing observation, to increase the doses, according to the impression produced by the drug. As the effects of veratrum are obtained much more quickly than that of digitalis, it follows that the details of administration must differ greatly for each drug.

The Prophylaxis of Puerperal Eclampsia

The prevention of puerperal eclampsia depends upon an adequate supervision of the pregnant woman, to the end that albuminuria may be promptly recognized, when present, and promptly and efficiently treated.

Some of the methods employed for this supervision are not always practicable, except for wealthy or at least well-to-do patients. Thus, laboratory analyses of the urine once or twice a week for three months is too costly for most patients, and is quite unnecessary. When the doctor is engaged for the case, he should strongly impress upon the patient the necessity of reporting to him during the last three months of pregnancy *any* states of ill health, especially headache, nervousness, nausea, edema of feet, hands or face, or scanty urine. The patient should also be instructed to send samples of her urine at the beginning of the seventh, the eighth, and the ninth month. If these precautions are faithfully observed, no serious case of nephritis will escape discovery.

How to Examine Urine

Whenever the urine is found to be of very low specific gravity or to contain albumin, then frequent examinations must be made; the frequency varying, according to the severity of the condition, from daily to twice a week. It is not safe to make the intervals longer than half a week if once the kidneys have been involved, as these patients sometimes change for the worse very suddenly.

But these examinations of the urine need not be elaborate analyses, qualitative or quantitative. On the contrary, it is better that they should be simple, so that they can be made by the doctor himself in a few minutes; for then they are more likely to be made often.

Three things the doctor must find out—the rest is immaterial. (1) He must know the amount of urine passed in the twenty-four hours; (2) he must know its specific gravity;

and (3) he must know the proportion of albumin present.

The first object can be ascertained by having the patient collect the urine in a vessel from noon to noon. However, the sample used for testing should not be taken from this twenty-four hours' collection, for part of it has stood too long. The specimen should be freshly passed.

The specific gravity is found in a moment by means of a urinometer.

Thirdly, the albumin can be determined most quickly and reliably by the heat-test. This latter statement will be challenged by some of your readers; nevertheless, I am convinced of its correctness. I have used both the heat and the nitric-acid tests for many years, and I prefer to stake my patients' safety on the former.

Much depends, however, upon the manner in which the heat-test is performed. If done in the manner described below, it is as delicate as the acid-test, and it is not subject to the error of redissolving some of the albumin by using too much acid.

The Heat-Test for Albumin in Urine

I use a test tube that has a mark on it 100 millimeters from the bottom. The reason for this will appear below.* If the urine is not perfectly clear or if it does not become clear on heating moderately, it should be filtered. As a matter of fact, albuminous urine is nearly always clear. The test tube is filled with urine to the level of the 100-millimeter mark. Only the upper portion is then heated to the boiling-point over an alcohol-lamp. In this way, the faintest precipitate can be recognized by contrast with the unboiled lower portion. If no cloudiness is produced by the boiling, the test need not be carried any farther; for, no albumin is present.

If, on the other hand, there is seen ever so faint a precipitate in the boiled portion, it may indicate albumin, but also only phosphates. The addition of a drop or two of dilute acetic acid will dissolve the phosphates and cause the urine to clear up; while, if albumin, it will not. Care should be taken to use only a very small amount of a weak acid for this part of the test, because a strong acid, such as nitric, is liable to redissolve some of the albumin and thus give a deceptive answer when the amount of albumin is small.

If the precipitate has persisted after adding acetic acid, then albumin is present; and then the most important test has still to be made; we must find out how much of it there is.

To determine the percentage of the albumin, all the urine contained in the test tube now is brought to the boiling-point and *kept boiling for at least five minutes*. By passing the test tube (which should be of ample size) rapidly back and forth over the alcohol-flame, explosive boiling may be avoided. This is the important part of the test, for, in many samples of urine the precipitate will not settle unless it is well boiled. The tube may now be set in the rack to cool and settle, and, in three or four hours, the albumin will have settled to the bottom, while the supernatant urine will be clear.

By placing a millimeter-scale beside the test tube, it will be easy to read off the number of millimeters of albumin at the bottom of the tube. Supposing the precipitate measures 15 millimeters, it would not be correct, of course, to say that the specimen contains 15 percent of albumin. Nevertheless, the fact that the precipitate fills 15:100 of the tube is just as valuable a means of comparison with future examinations as would be a more elaborate and difficult quantitative examination. Thus, the execution of the test has consumed only about five minutes, and, so, the busy doctor can make a daily test, if need be, without encroaching unduly on his time.

The Relative Importance of the Albumin

Of course, the relation between the quantity of urine secreted, its specific gravity, and the amount of albumin present is of great importance. The safety of the patient depends upon her getting rid of her waste products of metabolism. A low specific gravity, by itself, indicates a lack of elimination; still, if at the same time the amount of urine is large, the total elimination of solids may be sufficient. In most of these cases the urine is of low specific gravity and scanty in amount, thus rendering the danger all the greater. In a very few cases there is but little or no albumin present, yet, I have never seen convulsions occur unless urine was scanty or of low specific gravity, or both.

I have always warned the students of my classes against the danger of attaching too much importance to the presence or absence of albumin, and too little to the quantity and the specific gravity. Irrespective of the amount of albumin, if the volume of urine voided can be maintained at three pints and the specific gravity is not much below 1010, the patient is fairly safe.

Early in my practice, I attended a woman pregnant with her second child, who, two

weeks before delivery, had waterlogged feet and legs and puffy hands and face, complaining of headache and nervousness, and whose urine measured but 1 pint in twenty-four hours and had a specific gravity of 1001, while albumin was absent. She had had eclamptic convulsions in her first pregnancy, despite the excessive catharsis induced with elaterium, calomel, croton-oil, and the like; finally giving birth to a little living skeleton weighing only 2 pounds.

When this woman came under my care, I put her on digitalis and acetate of potassium and maintained mild catharsis; strong emphasis being put on the digitalis. The amount of urine rose to 60 ounces, although the specific gravity would not go above 1006. All her symptoms improved, and she went through her labor safely, with but one slight convolution. During the following night, her after-pains became very severe, when the

nurse gave her 1 S grain of morphine hypodermically. For the next five days, she slept heavily day and night; she could be roused, but would fall asleep while eating. During this time, she became more dropical and albumin appeared in the urine, but she finally recovered perfectly under large doses of digitalis. Why there was no albumin present before delivery is a puzzle that I must leave to those who can settle these problems by theory.

A considerable proportion of the medical profession are in the habit of attaching too much importance to the presence of albumin in the urine, regarding the patient as safe if albumin is absent. The point to be emphasized is, that the quantity of urine excreted and its specific gravity have a much more important bearing on the patient's safety than the mere presence or absence of albumin.

(*To be continued.*)

Bacillus-Coli Cystitis and Its Successful Treatment

By J. FAVIL BIEHN, M. D., Chicago, Illinois

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[Continued from page 235, March issue.]

A RECENT case of persistent chronic cystitis that came to my notice, after stock bacterins had been used during a period of four weeks without apparent benefit, proved to be a somewhat rare infection.

A physician who had the case, upon centrifuging the urine and staining by Gram method, found a Gram-negative short bacillus, morphologically identical with the colon-bacillus; the urine, however, was alkaline in reaction. Nevertheless, he considered this to be a colon-bacillus infection and gave stock bacillus coli bacterins; however, with negative results. Upon examining the urine in this case, I found it was slightly alkaline, contained much pus, many phosphates, carbonate of ammonium crystals, and a very minute actively motile bacillus. The fact that the urine was alkaline and the bacillus was highly motile and rather smaller than the colon-bacillus led me to believe that it was not a typical bacillus coli communis; and this proved to be the case, as this organism when isolated in pure culture rapidly liquefied gelatin. It was recognized as proteus vulgaris. A vaccine prepared from this

organism and given in combination with hexamethylenamine and sodium phosphate, after a primary thorough irrigation of the bladder with boric-acid solution, resulted in a clinical cure within fourteen days.

The only other cases of proteus cystitis that I have seen gave a definite history of having followed shortly after catheterization, infection being unquestionably due to this procedure.

A very interesting case of cystitis was one in which the patient suddenly developed, after a night of exposure, a violent cystitis. There was a large amount of pus and blood in the urine, a trace of albumin, but no casts. The temperature was 102° F. and fairly continuous. An autogenous bacterin was prepared from the urine, and examination of the sediment showed practically nothing but colon-bacilli, while the cultures also showed nothing but colon-bacilli. The patient was given ten doses of an autogenous bacterin, with but slight results. The urine became free of colon-bacilli to a great extent, but there was still considerable pus present, and the clinical symptoms, frequent urination particularly, persisted.

This patient was then referred to me, when a careful examination of the urine showed a few pus-corpuscles, a few Gram-negative bacilli—probably *bacillus coli*—and here and there a Gram-positive diphtheroid. A vaccine prepared from this Gram-negative bacillus and diphtheroid was given to the patient. The vaccine contained 200,000,000 colon-bacilli and 50,000,000 of the pseudo-diphtheria-bacilli. The physician was instructed to give 1-2 Cc. as the initial dose. As he had given the patient 800,000,000 colon-bacilli previously at a single dose, he gave one Cc. of the mixed bacterin; with the result that the patient developed a very sharp reaction, which was unquestionably due to the large initial dose—50,000,000 of pseudo-diphtheria-bacilli. And the patient developed immediately following this first dose of vaccine an acute prostatitis. Upon examining this patient, it was found that the purulent discharge from the prostate gland now contained a practically pure culture of the diphtheroid bacillus. The usual medicinal treatment (hot fomentations, sedatives, finally massage of the prostate gland) resulted in the clearing up of his symptoms within ten days.

Now he was given a second dose of the combined bacterin; only 1-2 Cc., however, was given. This produced only a very slight reaction. The general treatment was continued and a gradually increasing dose of bacterins was given every seventh day. After the fourth dose, all symptoms had disappeared.

This was unquestionably primarily a diphtheroid infection of the prostate gland, the secondary or accompanying *bacillus coli* cystitis being the actual cause for which he sought relief. It may have been possible for the bacteriologist in the first instance to find the diphtheroid bacillus, but this is doubtful, owing to the enormous number of colon-bacilli present. As a result of the use of *coli* vaccines, however, this organism was greatly held in abeyance, with the result that when I saw the patient the diphtheroid bacillus could be easily demonstrated in the smear. Or, it may have been that the diphtheroid bacillus, although found in the original examination, was not considered of etiologic importance and, therefore, omitted in the bacterin.

Why Bacterins Fail

I have seen a score or more of cases of *bacillus coli* cystitis in which the usual stock or even autogenous vaccine produced practically no effect. For a long time I was un-

able to understand the reason for failure, especially of an autogenous vaccine, until I came across an article by Doctor Allen in *The British Medical Journal*, in which he described the same experience, and stated further that he had found that some strains of this organism, when heated in the preparation of a bacterin, did not produce an immunizing response, but when killed by the use of 1-2 percent carbolic acid, no heat whatsoever being employed, a favorable result many times could be obtained.

As a result of this information, I have made it a rule to divide my bacterin into two parts; one-half of which I heat, the other half I treat with 1-2 percent carbolic acid or trikresol; and, since using a vaccine prepared in this manner, I have had very few failures. Doctor Allen prepares his vaccine in three parts, one part of which consists of sensitized, but not killed, bacteria. With this, I have had no experience.

Something About Dosage

While it may be said, as a general rule, that the size of the initial dose should be in inverse proportion to the size of the lesion, that is, in an extensive lesion, a very small dose should be given, whereas in a very small lesion, a large dose should be given. Yet, it is advisable in cases of cystitis due to the *bacillus coli communis*, or other organism, for that matter, to begin with a small dose, not over 25,000,000, owing to the fact that we cannot be sure that the cystitis is not secondary to some hidden or ill-defined lesion of the gastrointestinal tract.

Many times it happens that a large initial dose of a *bacillus coli communis* bacterin will result in a severe reaction and a physician will notice for the first time, and often the patient, too, the presence of a lesion referable to some portion of the body other than the bladder. Such cases I have seen numerous times. Very frequently, there will be acute symptoms referable to the gall-bladder, the appendix, some portion of the colon, the rectum, the kidney, and in women the pelvic organs. Unless the physician understands that these are probably chronic infections by the *bacillus coli communis*, in which the patient had through long association or through lack of severe symptoms not complained previously, he may imagine a complication has arisen. This, however, is simply the manifestation of a local reaction to the bacterin.

A very peculiar case which I saw not long ago was one in which the patient had a condition of general ill health, for which he had

been treated by a number of physicians during a period of three or four years, with little or no benefit. An examination for life insurance, when he applied for a large policy, resulted in his being refused, the reason given being that he suffered from a bacteruria. His physician had an autogenous bacterin prepared and gave him an initial dose of 250,000,000 colon-bacilli, the result of which was a severe reaction and the onset within eight hours of symptoms of a violent acute coli-cystitis, for which he would have been operated upon if he had taken the advice of his consultants, but, having a dread of surgical operations, as a result of three deaths in his family on the operating-table, he refused. The symptoms, however, very rapidly cleared up and, as a result of fifteen additional injections of his autogenous bacterin, he has improved wonderfully in health, put on weight, and has since been accepted by the insurance company.

In definitely localized inflammations due to the bacillus coli, the initial dose should not be more than 25,000,000. If this does not produce a marked reaction, it may be repeated daily for four or five injections or the dose may be doubled every few days—say, four or five—if a severe reaction is not produced. The usual maximum dose is 1,000,000,000.

Securing Samples of Urine

In securing a sample of urine for the preparation of an autogenous vaccine, I have obtained the best results from a sample collected at or near the noon hour; especially is this true if the patient is up and about.

It is not absolutely necessary, at least in males, to obtain a catheterized specimen, although in females this is highly essential, in order to avoid the always present vaginal infection. Ordinarily in the male it suffices for the patient to have a wide-mouthed sterile container—I prefer a 100-Cc. cotton stoppered Soxhlet's extraction-flask, that has been carefully sterilized. The patient removes the stopper, holding the mouth of the

flask before him, and after allowing an ounce or two of the urine to pass, thereby washing out the urethra, the flask is held in the stream and one or two ounces is collected, the cotton stopper being immediately replaced.

While it is possible by thorough cleansing of the external parts to obtain a fair sample in the same manner from the female, yet, it is always advisable, if possible, to use a catheter.

The urine should be centrifuged and a careful examination made, using Gram's staining-method. If streptococci, diplococci, diphtheroids or other bacteria are found in addition to colon-bacilli, some of the material should be plated out on blood agar plates; in fact, I have so frequently found streptococci by this method, even when none could be demonstrated microscopically, that I now use it as a routine procedure.

Care Necessary in Chronic Cases

In acute infections, the etiologic agent usually is the predominating one, but in chronic infections the secondary organisms that practically always are contained in the discharge may be present in several hundred-fold greater numbers than the true infectious agent. And, as these secondary infection organisms, especially if they be staphylococci, colon bacilli, proteus, and the like, rapidly overgrow pneumococci, streptococci, and such, the greatest care must be exercised in preparing a vaccine for such chronic cases.

Cases of bacillus-coli cystitis, pure and simple, without surgical complications, as an enlarged prostate gland, polyps or other tumors, stone, and so on, in the vast majority of cases, if not all, are definitely curable by the use of a proper stock or autogenous vaccine, combined with general medicinal treatment. The average case, even though decidedly chronic, and of long standing, can be cured by the addition of proper bacterins to the usual routine medicinal treatment and I believe in from one-third to one-half the time otherwise required.

ASPIRATION

TO GATHER something from every one thou passeth on the highway, and from every experience fate sends thee, and out of the wide knowledge thus gained of human weaknesses and human needs, to distill in thine own heart the precious oil of Sympathy.—*Annie Fellows Johnston.*

Measles: How to Treat It Successfully*

By GEORGE H. CANDLER, M. D., Chicago, Illinois

MEASLES (rubeola, morbilli) is without question the most common of all the eruptive fevers, few children escaping the disease. It is, from the first, extremely contagious, and while not often dangerous in itself, frequently prepared the way for the more serious disorders. Otitis is especially to be guarded against, and laryngitis and bronchopneumonia frequently complicate matters. The absolute necessity for constant and minute attention to the toilet of the nose, mouth and throat will be apparent.

A microorganism, not yet identified, is supposed to be the primal cause of the disease; the infection is air-borne, children frequently contracting the disease from occupying the same room at school or even passing the house of an infected individual. The germ has not the resistant power possessed by the microorganism of scarlatina, free exposure of clothing to air and sunlight seemingly effecting its destruction; it is always wise, however, thoroughly to disinfect, after a case of measles, all clothing and the premises probably infected. In very rare cases the disease has been conveyed by a third person—the parent, doctor or nurse—but as a rule direct contact is necessary. The prodromal symptoms are often slight and the patient developing measles—infected even at this early stage—plays with other children or attends school till the appearance of the rash attracts attention.

The fact that very young children, nursing infants especially, do not readily contract measles is proven beyond question, yet the exceptions are many, the writer having seen an entire family, from grandmother to nursing infant, contract measles from a 10-year-old girl.

Incubation and Symptoms

The incubative period is from ten to fourteen days, the disease usually appearing within ten days after exposure.

The first symptoms are usually a marked coryza with some headache and sore throat; the cough is often troublesome, being frequent and violent, occasionally provoking vomiting. Upon examination the tonsils and fauces will be found congested and, if a careful survey of the hard palate and buccal mucosa is made, small red spots may be noted upon the roof of the mouth, while minute, bluish-white

macules (Koplik's spots) appear upon the mucous lining of the cheeks. These often become more apparent if the mouth is kept open for a minute and slight tension is made upon the cheek by pressure with the finger tip, hooked within the corner of the mouth.

The child may complain of backache, lack of appetite and smarting of the eyes; in many cases the light proves disagreeable and the little patient seeks the dark corners. Listlessness is general in younger children. There may or may not be some elevation of temperature, though I have frequently noted a rise of half a degree the day before the spots were discoverable upon the buccal mucosa. It might be observed here that it is always well to examine suspected cases twice daily, and with artificial light as the macules of Koplik (which are usually to be seen opposite the molars) are not always easily seen, although they are present in nearly every well-marked case of measles. Their value in making an early and positive diagnosis cannot be overestimated since they appear in none of the other eruptive fevers.

Once the rash appears upon the face (usually three to four days later) they fade entirely away. This should be remembered, as physicians have given a negative diagnosis because Koplik's spots were not to be found, though the typical eruption of measles existed on the body. Quite frequently the doctor does not see the patient till the rash has developed and fever is marked, but in every case of coryza with cough and malaise we should examine the mouth carefully.

The rash appears first upon the face—usually about the ears, mouth and nose—and may be looked for on the third or fourth day after the coryza has set in. In some cases the eruption is thickest about the hair on the neck and resembles nothing so much as a number of flea-bites. Hour by hour the eruption spreads until the entire face is patched with small, dark-red macules. In places the skin is unaffected, in others the spots coalesce. Some swelling may occur, the eyes especially becoming puffed, and crusts may form about the nasal openings. In severe cases the features become unrecognizable. Within two days the rash is fully "out" and may become papular. As a rule, about the second day the eruption spreads to the chest, back and arms and, last of all, the trunk and extremities suffer. It is not

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uncommon to see cases without any eruption below the knees, but it is a rule for the rash to fade from the face about the time that spots appear upon the lower limbs.

Desquamation begins immediately after the eruption disappears, beginning naturally upon the face and following downwards. The skin is shed in fine bran-like particles and the child becomes less dangerous as the desquamation proceeds. In three weeks from the time of attack the danger of contagion is, as a rule, over. In mild cases desquamation is slight; here the eruption has been marked and there has been considerable fever. The process lasts from eight days to two weeks—the latter period being a safe limit.

The temperature usually is at its highest during the appearance of the rash; it reaches this point, in typical cases, about the second day—when the face is covered with macules; 104° to 105° F. is not uncommon, though under modern treatment, instituted early, it rarely exceeds 102° F. At this period discomfort is likely to be extreme; the skin itches and burns, the eyes and nose run profusely, the tongue is coated and the cough frequent and severe. The conjunctiva are injected and moco-pus may exude and fasten the eyelids together. This never occurs if proper treatment is instituted.

The tongue of measles somewhat resembles that of scarlet-fever but the papillæ are not as prominent and the edges have not the characteristic redness. In cases seen at this time constipation is the rule; but diarrhea may be present and this symptom calls for prompt remedial measures—enterocolitis being always possible. There is more or less difficulty in deglutition, the tonsils and fauces being swollen. The glands (submaxillary and postcervical) may be swollen, indeed usually are. Under proper treatment the rash declines about the third or fourth day, and as it fades, the fever falls, the cough lessens and the patient feels better generally. By the time desquamation has well set in, the trouble in uncomplicated cases is to keep the patient in bed.

Atypical Cases

Occasionally the attack is sudden, high fever coming on within a few hours and the child showing every sign of profound toxemia. Here the rash may appear almost with the fever and in less than a day cover the entire body. In exceptional cases it may be hemorrhagic—"black measles." It is a question whether, after all, this is not a mixed infection: I have noticed that such cases

convey a similar contagion in nearly every instance. In such patients the temperature runs high and exhaustion soon follows. While not necessarily fatal, the prognosis is bad.

In some severe cases the rash is very scanty and appears late, but every other symptom is accentuated. Again, the spots may be few and faint, scarcely invading the body at all; the fever is moderate and the child scarcely complains. If allowed to run loose, however, severe symptoms may develop. A patient who has measles should be kept in bed till the disease has run its course. In rare instances the rash disappears, severe prostration ensues, and later the eruption redevelops with increased severity. Mild cases are not always easily differentiated from rubella, but the typical smell of the measles-patient will never be mistaken.

Prognosis and Differential Diagnosis

In ordinary cases excellent; in cases complicated by bronchopneumonia or enterocolitis, guarded. The necessity for careful attention to pharynx, eyes and ears must be impressed upon the nurse.

Rubella is so closely allied to measles that it is frequently confounded with the latter disease. Koplik's spots (the bluish-white macules upon the buccal mucosa) are, however, never present in rubella. The fever is slight, coryza hardly noticeable—if present at all—and the rash is usually the first thing to attract attention. However, there may be some malaise, vomiting or headache. Occasionally severe systemic disturbances occur. The disease is contagious, having an incubative period of two or three weeks. Measles and scarlet-fever do not protect against rubella and the whole trio may occur in the one person within a year. The rash tells the story. Appearing first (as a rule) upon the face, it covers within a few hours the chest and body; the spots generally are pale red in color and often pinhead in size, sometimes even resembling those of scarlet-fever. Discrete maculopapules may however be found about the wrist or forehead in nearly all cases. The whole eruption may fade in one day or last two, and the fever rarely exceeds 101° F. Glandular swelling is common but also transient, and desquamation is often absent, though it is best to have the patient take a series of antiseptic baths. The disease is of little importance and the main thing is to treat symptoms—clean out and keep clean the mouth, nose, intestine and

skin, and prevent others from contracting the disorder. Many a case of rubella has been termed "rubeola" and the physician has gloried in the prompt manner in which he vanquished the disease.

In *scarlet-fever* the invasion is abrupt and symptoms severe. Koplik's spots are lacking and coryza is absent. The temperature runs up to 101° or 105° F., without any sign or eruption save perhaps a congestion of fauces and tonsils, while "red-pepper" spots may be noted on the roof of the mouth. Headache is marked, sore throat distressing, and prostration profound even early. The rash appears first upon neck or chest, rarely about groins, axillæ or buttocks. There are no macules, the skin assuming a red tint. About the mouth and nose white areas will be noted. There can be no possible misconception of the condition, once eruption occurs. Sore throat, without cough and coryza, the "strawberry tongue," vomiting, prostration, severe headache and pain in back with high temperature usually mean scarlatina. In from twelve to thirty-six hours the eruption will decide the diagnosis.

Treatment

Most writers assert that measles is a self-limited disease and active-treatment therefor useless. We beg to differ. All germ-diseases are "self limited" if left to themselves, but the doctor is supposed to be able to check their progress. In measles he can undoubtedly do so. He can, moreover, see to it that complications are prevented and serious sequelæ avoided. Measles, accompanied by pneumonia, proves extremely fatal—but pneumonia should not be allowed to occur. Otitis, as a complication, causes many cases of deafness; otitis need not develop. The catarrhal angina which always exists requires attention, most certainly, and the invading microorganisms may just as well be destroyed as left to do harikari when no further damage can be done!

The best way to treat measles is to begin early and saturate the patient with calcium sulphide, at the same time exhibiting small doses of quinine (the arsenate or ferrocyanide) and nuclein. In order to secure satisfactory intestinal conditions it is well to give blue mass and soda, gr. 1 (or calomel, gr. 1-10 to 1-6 according to age) every hour for four doses, adding gr. 1-12 of podophyllin to each dose. One hour after the last dose a saline laxative draught is given and after the bowels have moved freely a warm enema of saline solution or, better still, a mild alka-

line antiseptic. The child of course is placed in bed, and mouth, nostrils, and fauces are rinsed, sprayed or gargled with a mentholated alkaline antiseptic. The ears are carefully syringed with a warm boric-acid solution, and then a minim of campho-menthol or antiseptoil dropped into the canal.

The child is stripped, and the entire body sponged with a phenolized solution of magnesium sulphate, at body temperature. The room of course should be warm to avoid chilling.

To prepare a standard epsom salt solution, dissolve in a quart of water, which has just boiled, two ounces of magnesium sulphate; the salt is thoroughly dissolved by stirring, and ten minims of carbolic acid is added. The addition of twenty grains of tartaric acid markedly enhances the cooling, soothing effect of the solution upon the skin.

This lotion should be used twice daily throughout the course of all the eruptive fevers; it lessens irritation, prevents infection, keeps the pores open and active, and generally soothes and quiets the patient. Care should be taken to sponge only a part of the body at a time, and to *keep the solution at, or just a degree or two below the body temperature.*

Nuclein, 5 to 10 drops, should be given three times a day, and calcium sulphide, gr. 1-6, every hour for forty-eight hours, then every two hours. Till the rash is pronounced, quinine arsenate, gr. 1-64, may be exhibited every three or four hours, making way as the fever rises and rash appears for a solution of gelsemamine (or aconitine) and echinacoid. The dosage of gelsemamine or aconitine varies, but enough should be given to keep the temperature below 101° F. If, however, the bowel has been emptied and the skin kept clean, the calcium sulphide and nuclein will prevent hyperpyrexia. In fact, fever under this treatment is so slight as to be of no moment.

Upon a small lamp a tin containing boiling water should be placed and eucalyptol and oil of turpentine, twenty drops of each, dropped thereon every three or four hours. The medicated steam serves to control bronchial symptoms. An enema is administered each day for the first four days, when, usually, all symptoms have ceased.

If cough is at all severe a few doses of calcidin will control it. Diarrhea will yield to the sulphocarbonates, 2 grains every three hours, added to the above measures.

Occasionally renal action is deficient, even the daily saline laxative (which should always

be given) failing to produce a free flow of urine. Barley water should then be ordered *ad libitum*, with gr. 1-3 barosmoid every three hours. Excessive urination with signs of renal irritation will call for arbutin, gr. 1-3 to 1, at equal intervals.

Otitis yields promptly to heat and instillations of thymol iodide in pure vegetable oil.

The diet should be light: barley water, gruels, fruit juices, custard and light broths, with stale bread, zwieback and crackers being ample at first. Later a mixed, easily digested diet may be given. Tonics are essential, the

arsenates of iron, quinine and strychnine being the best for general use.

Special indications must be met as they arise. The more pronounced the infection the more need for the systemic antiseptics (calcium sulphide, nuclein and echinacea) and the more essential the enema, saline laxative draught and sponge-bath. In some few cases intestinal antiseptics are demanded; here again the sulphocarbonates will be found invaluable. If constipation exists, the calcium and sodium salts should be given, zinc proving too astringent.

The Emergency Treatment of Poisoning

By SAMUEL C. BEACH, M. D., Evanston, Illinois

BY NO other emergency is the soul and mettle of the physician so tried as by the excited, hysterical call, "Come quick, doctor, he's poisoned!" And one can never tell when this will happen—so preparedness may be difficult or even impossible. The call may come on some quiet, languorous summer afternoon, when you are gliding along a country road at the comfortable unexciting speed of eighteen miles an hour and the steady whir of the motor is fast lulling you to sleep; it may come when you've your best suit on and are decorously proceeding to church, with your wife on your arm and your thoughts far, far away from such matters as poisoning-cases; but, it *never* does come when you actually are prepared for such an emergency and have even the semblance of an antidote with you. You are never, when the dire thing happens, in the office or drugstore, where you can reach up on the shelf and take down the exact antagonist you want and with perfect calmness and absence of excitement pour out the potion that will bring peace and comfort to the suffering body of the victim and speedily draw him away from the verge of the grave.

Then, also, these cases of poisoning are not of sufficient frequency for the average doctor to keep informed on the toxicology, much less to have the antidotes in readiness for use. Moreover these cases have a habit of occurring some twenty miles or so from your habitat and in places where one will find absolutely nothing suitable for the occasion.

The aim of this article will be to bring back to mind the many antidotes one can find in the common kitchen-pantry and prepare

extemporaneously, thus not only aiding in saving a human life, but increasing one's reputation for resourcefulness.

To illustrate this point, let us take some one poison, say, arsenic. Now, you will instantly recollect that the antidote for this is ferric hydroxide—but where will you get that? Question: Will one man in a hundred ever think of his bottle of tincture of ferric chloride in his medicine-case, or of the fact that he can easily obtain lime-water and thus extemporaneously prepare his antidote?

In what follows, the poisons will be taken up one by one, and the symptoms produced by them be described for ready diagnosis; then the treatment will be given, first classically, then in accordance with emergency-methods, mentioning such antidotes as can be readily obtained in the kitchen-pantry or carried customarily in one's medicine-case.

It is hoped that a perusal of these lines may stimulate a desire for further knowledge and inspire physicians to crystallize their ideas on this important subject, so that when the call comes it will find everyone fully prepared.

Poisons and Their Action in General

A poison may be defined as any substance which, when ingested, impairs or destroys cell function, by virtue of its action thereon. Only poisons which make their entrance from without will be considered here; those poisonous bodies which are generated by disease not falling properly under the head of toxicology.

Poisons may be swallowed either by mistake or with suicidal intent; they may be inhaled or taken hypodermically, by enema

or by absorption from the skin or the mucous or serous membrane.

There are many factors which influence the action of poison, such as the mode of its administration, the form of the poison, dose, combination, condition of the stomach, quantity and quality of food in the stomach, general health, habit, idiosyncrasy, and, finally, age and sex.

The action is more rapid when the substance is introduced under the skin or directly into the circulation. Absorption is more rapid from serous than from mucous membranes, while absorption through the skin takes a long time. Inhalation of gas gives rise to symptoms very quickly, on account of the rapidity with which diffusion takes place.

The form of the poison influences the action to a considerable degree, watery solutions, when taken into the stomach, being absorbed faster than when in substance, while oily solutions are absorbed more slowly than the aqueous.

The size of the dose is material, an excessive dose often acting as its own emetic, as for instance the sulphates of copper and zinc, even calomel, if given in a large-enough dose, being rejected at once.

When morphine is associated with its synergist chloral, an increased action may be expected; but when taken together with its antagonist, atropine, the poisonous effect of each will be lessened or delayed. Thus, then, the combination in which a drug is taken modifies its action.

The condition of the stomach at the time is important, a healthy, active organ absorbing much more rapidly. Irritant poisons are much more fatal when a person has an inflamed or congested stomach. The period of digestion will influence the result markedly, for, should the stomach contents be strongly acid, an amount of alkali could be swallowed that would otherwise prove fatal. Occasionally the stomach contents are alkaline enough to precipitate alkaloids, and these, in turn, may be redissolved when the stomach becomes acid again.

The condition of health will readily aid or nullify poisonous action, a healthy system showing great vital resistance, while a body weakened by exhaustion or illness would more readily succumb. The presence of paralysis will allow of large amounts of strychnine being taken without harm; so will the presence of pain cause toleration of large amounts of opium. Any impairment of the eliminative organs will cause retention of the poison in

the system and thus hasten the appearance of symptoms of poisoning.

While by their habitual use one may become habituated (not, however, without harm) to certain organic poisons, as, for instance, tobacco, cocaine, morphine, alcohol, the same is not true of mineral poisons; although history does tell us that the old French kings were fed on gradually increasing doses of arsenic, with the idea of immunizing them against the attempts of their enemies, arsenic being the popular poison at that time.

The idiosyncrasy of certain individuals against particular drugs must not be forgotten, and, while one is not able to tell by inspection whether serious effects will be produced or not, yet, the subsequent appearance of toxic symptoms should cause the physician to suspect that the drug and the patient are incompatible. The questions on the history-sheet of a certain great physician always included: "Do you know of any medicine that you cannot take or which makes you sick?"

If the person is physically exhausted, either from disease or hard work, greater effect is noted as the result of administering ordinary doses, and, in the case of depressing poisons, the effect is much increased.

It is a well-known fact that the extremes of life are more profoundly affected by opium, while at those ages mercurials can be given in larger amounts than to persons of middle adult life. Women are asserted to be more easily affected than men.

The system disposes of poison in various ways, principally by elimination, as, direct emesis or profuse diarrhea, or by way of the kidneys, skin or salivary glands; by deposition in the tissues, as in the case of lead; by oxidation, as, phosphorus being oxidized to its acid; and, finally, by phagocytosis, the white blood-corpuscles acting in such a way as to destroy the poison or at least render it less harmful.

The cumulative effects of drugs must be borne in mind, that is, where the drug is excreted so much slower than it is ingested that accumulation results and produces poisonous effects.

The selective action of opium for the brain, of belladonna for the eye, of digitalis for the heart, and of strychnine for the spinal cord need only to be spoken of to be remembered; and this knowledge will be useful in making a differential diagnosis of poisoning by any of these drugs.

Most poisons act by exerting a general de-vitalizing influence; some, however, as, the

mineral acids and alkalis, exert their effects by a local corrosive or burning action, while others affect only some one vital organ or structure.

Poisons may be acute or chronic in their action, which terms are self-explanatory; certain drugs, as, morphine and phosphorus, have an effect which is spoken of as immediate and remote, respectively.

In taking up the symptoms of poisoning, it must be remembered that an early diagnosis is imperative, and, also, that reliance cannot be placed on any symptom, but that guidance and enlightenment must be obtained rather by the sum total of all the evidence or symptoms presented.

We will now take up the several poisons:

Opium or Its Preparations

The symptoms are so well known as to need but passing mention; the most important being the stupor, from which it is difficult or even impossible to arouse the patient, stertorous breathing and "pin-point" pupils, irresponsive to light. The face is cool and clammy, all the secretions but that of sweat being diminished by the drug; the urine is concentrated and often retained. Death is usually due to paralysis of respiration.

Treatment.—Acute poisoning is antidoted by the use of atropine or picrotoxin, given hypodermically. Inasmuch as opium and its preparations are both excreted and absorbed by the stomach, the washing out of this organ frequently with a 1-percent potassium permanganate solution is strongly advised, care being taken to leave some of the solution in the stomach, as it chemically antidotes opium by oxidation. Strong black coffee also helps. "Flicking" the chest with a cold water towel and walking the patient around are aids, being careful not to produce exhaustion by the latter method. Artificial respiration may have to be resorted to; and, to start breathing in a patient, there is no better method than dilatation of the sphincter ani with the thumbs, keeping up the rhythmic motion of respiration afterward by the usual method. Be sure to catheterize the bladder.

Emergency Treatment.—To wash out the stomach, use dishwater or soapy water, the grease in the former coating the lining of that organ and limiting further absorption, the alkali of the soap antidoting the action of the alkaloids of opium. For a stimulant, ammonia can be used, this being an article commonly found in every home and one of the best and quickest diffusible stimulants there is. The aqua ammonia can be used hypo-

dermically also. The coffee is easily obtained, and there will be no difficulty in carrying on artificial respiration nor in walking the patient around, if thought advisable.

Chronic poisoning.—Since the passage of the Harrison antinarcotic law, this subject has become of more than passing interest to the general practitioner, and it will doubtless be of interest to detail briefly a treatment which can be carried out at home; remembering that the family practitioner has the entire confidence of his patient, a fact which largely influences the result.

The patient is to be thoroughly prepared by a course of catharsis, using about twice to four times the amount of cathartics which would ordinarily be administered, inasmuch as the bowel of the opium-habitué is partly paralyzed. From four to six free bowel movements a day should be obtained for a period of at least three days, giving the usual amount of the opium daily, and insisting on exercise, as also on a generous supply of nourishing food. It is well at this time to give the opium hypodermically, whether this has been the customary method of taking or not; for, by this method an accurate idea of the daily amount can be obtained.

Now start the administration of hypodermics of hyoscine and atropine, 1-400 and 1-300 of a grain respectively; giving enough to keep the patient comfortable and free from nervous worry, but not enough to produce more than a very mild delirium. This should be accomplished by the use of two or three hypodermics (as per above dose), given close together until the effect is manifest, then keeping the patient under this influence by repeating about once in three or four hours.

At the end of two days, nourishment and brisk catharsis being in the meantime kept up, the patient may be allowed to come out from under the influence enough to answer the inquiry as to whether he wants any more opium—the answer being usually in the negative. The treatment then can be stopped and the patient allowed to regain consciousness completely. The after-treatment is important.

Strychnine

Within twenty minutes after a poisonous dose of strychnine has been taken, there will be a sense of nervous uneasiness and suffocation associated with twitching of the muscles of the arms and legs, then suddenly there occurs a violent tonic contraction of all the muscles of the body, the stronger muscles determining the position into which the pa-

tient is thrown; this usually being the muscles of the back (*opisthotonus*). This convulsion will last for, possibly, five minutes, when the muscles as suddenly relax and the patient feels a sense of relief. This remission is characteristic of strychnine, and it may last from twenty minutes to half an hour, when there is a sudden and violent return of the convulsion. The remissions become shorter and the convulsions closer together, until at last death occurs from fixation of the muscles of respiration or from exhaustion.

This poison resembles tetanus in its action so closely that an accurate differentiation is important, the absence or presence of a wound being the first point sought; secondly, the convulsion of tetanus has no interval of relaxation or remission; thirdly, the mind in strychnine poisoning is clear until the last, while in tetanus it is clouded.

Treatment.—Empty the stomach immediately, remembering that it may be difficult or even impossible to use the stomach-tube, inasmuch as it may provoke convulsions. Give emetics, preferably. Also catheterize the bladder at once to prevent reabsorption of the poison. Chloral hydrate is the physiological antidote and should be given in full doses. If the case is seen early enough for using the stomach-tube, wash out the stomach thoroughly with a 1-percent potassium-permanganate solution. Artificial respiration with oxygen has been very successfully employed in the treatment of this poisoning.

Emergency Treatment.—Strong tea, boiled for some time, for its tannin; chloroform, which the physician will usually have in his case, used to control the convulsions; and dishwater for an emetic.

Phosphorus

Cases of poisoning from this drug are often met with from the effects of ingesting the heads of matches, usually in children. It is one of the insidious deadly poisons that may give the physician the impression that the conditions have been relieved, and the pa-

tient may show signs of much relief, apparently having completely recovered from the effects of the drug. Then, in four or five hours or maybe not until two or three days, there will be manifested the remote effects of the drug, and death may result.

The immediate symptoms are vomiting, the vomited matter having a "garlicky" odor, intense thirst and hiccough. The patient is much depressed. The abdomen is distended and tympanitic. Then, as a result of the treatment, the immediate symptoms may all disappear and the patient recover, only to be taken with the remote symptoms after a varying interval of time, as stated. These are: severe icterus, hemorrhage from the nose, stomach, and bowels and purpuric spots under the skin and mucous membranes. Great weakness follows, the liver enlarges, the urine is scanty and albuminous, while death is preceded by coma or convulsions.

Treatment.—The treatment must, necessarily, be very thorough, inasmuch as the prevention of the remote symptoms depends on the complete removal of all the phosphorus from the stomach at the time of the first call. Oxidize the phosphorus into phosphoric acid by washing out the stomach repeatedly with the 1-percent potassium-permanganate solution. Avoid the use of oils of any kind, as they dissolve the phosphorus and allow of its more rapid absorption. Give intravenous injections of physiologic salt solution, with sodium carbonate, to maintain blood alkalinity. Give stimulants to keep up the strength of the heart.

Emergency Treatment.—Give warm dishwater or mustard-water as an emetic, using it freely enough to be sure that the stomach is thoroughly cleaned out. Then give solution of sodium bicarbonate and salt per rectum, repeating until it is sure that considerable amounts have been absorbed. Ammonia water can be used as a stimulant, either hypodermically or by mouth.

(To be continued.)

An Old Doctor's Life Story An Autobiography

By ROBERT GRAY, M. D., Pichuealco, Mexico

[Continued from page 150, February issue.]

BEFORE the tank was erected, I built the primary feature of my long-cherished dream of tropical comfort and health: a good

house of fine cedar lumber, amply ventilated with screens of wire cloth, doors, and windows, and a liberal open space around the top of the walls, just under the ceiling level, and

ceiled overhead with "plaster-board," an American asphalt novelty (not very long in vogue), impervious alike to heat, cold, and dampness, the house being covered with galvanized iron and floored with concrete.

The foregoing half-dozen paragraphs should constitute a finger-board to a "Eureka" for the denizens of hot, sickly countries, where pestiferous insects abound. Naturally, whenever the frosty breath of winter penetrates, shutters over the ventilators would be necessary; but here, where 55 Fahrenheit is low temperature, I have no shutters. I have glass windows, on hinges, inside the wire-cloth screens, which I can open and shut at pleasure; but the upper half of the doors and the upper space under the ceiling have no shutters.

Adding a bountiful fruit- and vegetable-garden, which I usually have (though everything in it was lately eaten up by grasshoppers in one hour), to my house and water-supply, brings well to the front my idea of how to form the foundation and frame-work of a tropical health-structure, vices and other unnatural incongruities not intervening, in which there should be but a very small modicum of medical participation.

These radical fortifications against the enemies of health and long life were embryonic in my meditation many years ere they had actuating nourishment to develop gestation, my munificent earnings having been twice seriously depleted by robbery, and so much spent on the poor and wretched, that financial ways and means were insufficient without borrowing. But at last the big jobs I did for the American plantations, and some hospitals I established on native plantations during decimating epidemics, afforded me the needful funds, and these were immediately put into requisition to accomplish what is finished.

As I am alone in the world, without an heir, I did not have to pause to scruple about providing capital for a family nor for the ever spectral "rainy day" always haunting the average practitioner. And I built, not elegantly, but practically and substantially, little heedful of the legacy I knew I must leave behind me, when my toes are turned up and my feet put foremost on the final journey to the mournful hill.

Hardships Brought by the Revolution

I was my own chief carpenter and mason, doing work with my own hands that would have cost me \$2000 (Mexican), building the

house and the water-tank with the help of two peon boys, previously ignorant of such work; I having time, because I refused to go on rounds among the plantations, with bands of freebooters roaming about under the eupheneous name of revolutionists, and having no special relish in being a victim held for ransom by such gentry. This put the people to the inconvenience of bringing their seriously ill here for treatment, every other doctor of the neighboring towns having, for a long time, sought refuge in cities where there were ample garrisons. And the same conditions continue, there being a federal garrison within 200 yards of where I am writing (in July, 1915), and bands of bandits anywhere from ten to thirty miles away. And such has been the status since the beginning of the Madero revolution, with slight and but temporary modifications—now considerably more than three years.

My Practice Now Restricted

This is why I have time to write these pages: I do not respond to any call more than a league [2-3 mile] away, and do not pass a night out of my house. And I see no hope of early relief from this unpleasant crisis, even should peace nominally be established by pending negotiations, as the lawless bands operating are not supposed to be obedient to any of the more prominent leaders farther north. The large, well-organized bodies of this district abandoned the struggle some time ago, under amnesty, but the small, more dangerous parties, who recognize no friends worth pillaging, continued.

The reason why it behooves me to keep out of their reach is, that I am reputed and believed to possess wealth; which, though, I never had, and could not amass in a hundred years of prosperous practice, the public estimating the apparent earnings, being ignorant of the stillborn work and leakage of tangible resources, as I never take anybody into my confidence on such delicate points.

I suppose it would be a novelty to you elegant practitioners to see a member of the profession grasping saw, plane, hammer, trowel, and day after day work ten hours under this burning sun for a year and a half, till the work was completed. I had to thank my boyhood experience for lessons that rendered me capable for the task.

[*To be continued.*]

What Others are Doing

TRAINING IN DIAGNOSIS

The Massachusetts General Hospital has undertaken a plan for postgraduate instruction by mail, which we wish to commend to every reader of CLINICAL MEDICINE, with the urgent advice that he take the course. As Dr. Richard C. Cabot pointed out some two or three years ago, clinical diagnosis, even in our very best hospitals, has been found to be exceedingly inaccurate. Indeed, when this matter was carefully investigated at the Massachusetts General Hospital, it was found that the autopsies revealed conditions which were not recognized at all in more than half the cases prior to death. How much larger must be the percentage of error in private practice!

Realizing the deplorable errors made in diagnosis, the Massachusetts General Hospital has devised a plan for the instruction of practitioners in diagnosis. The Hospital has arranged to send out carefully prepared clinical records of actual cases coming to autopsy. Four of these printed records will be sent to any physician every week for a fee of \$5.00 a year.

These records are edited by Drs. Richard C. Cabot and Hugh Cabot. Each record will give a complete clinical history of some case, with a discussion by some eminent practitioner, such as Dr. Richard C. Cabot himself. These reports will be supplemented by reports on the autopsies, thereby establishing the accuracy or inaccuracy of each clinical diagnosis. Any physician who will follow this course for a year and make a careful study of every one of the cases will wonderfully increase his diagnostic acumen.

We understand that in a number of localities these printed cases are being used at the meetings of medical societies as a basis for diagnostic and therapeutic discussion, thereby making unnecessary the preparation and reading of set papers. Such study and discussion will intensify interest in society work and prove of the utmost value to their members.

We sincerely hope that at least a thousand of the readers of this journal will write at once to Dr. Frederick A. Washburn, resident

physician, Massachusetts General Hospital, Boston, Massachusetts, who has charge of this work, and enroll themselves in this course.

NUCLEIN TREATMENT OF DEMENTIA PRÆCOX

We are sure that every reader of this journal will recall the interesting papers contributed last year by Bayard Holmes, in which he introduced to American physicians the method of treating dementia præcox developed by Donath in Germany and Lundvall in Sweden. A report of his experience with this method has been made by Charles F. Read, assistant superintendent of the Illinois State Hospital at Peoria (*Med. Rec.*, Jan. 15, p. 104).

In treating his patients, Doctor Read used a 10-percent solution of sodium nucleinate, prepared according to the formula of Donath, with the addition of a small amount of sodium cinnamate. Injections were made into the abdomen with a large glass syringe. While these are painful, the treatment is not severe and the solution is absorbed rapidly. No abscesses formed and practically no induration followed after the approximately 150 injections given in this series.

Doctor Read gives the details of 10 cases of dementia præcox treated with the nuclein by this method. Without following him closely, it may be stated that in one case, "after eight treatments, the patient became quite normal in conduct and talked freely, but had no insight." In another case, the patient improved during the treatment, and "became less seclusive, seemed more cheerful, and worked at fancy work. She was paroled, after some months, very markedly improved, but still odd in her behavior and without insight." In the third case, 10 injections produced no alteration of the white-cell blood count, no rise of temperature and no improvement. The next patient "did not improve until several months after cessation of treatment, when she cleared up rapidly and went out, apparently well, but without much insight." The fifth patient was paroled,

in excellent mental condition, three months after treatment was begun. Still another of the patients improved remarkably in conduct following the first treatment, but relapsed somewhat; then again improved following the second treatment. On the whole, however, this patient continued to do much better and finally escaped. (If we may perpetrate a pun, the treatment evidently "helped him out.") The next patient apparently received no material benefit from the treatment. A colored girl received 8 treatments extending over two months, following which she improved rapidly, and was finally paroled in what was, apparently, a normal condition. Case 9, which is described at considerable length, was interesting, in view of the marked improvement following immediately upon the injection of sodium nucleinate in a patient who had formerly been in a stationary condition. In the tenth, and last, case reported, the patient received 7 treatments, the number of white blood-cells ranging between 6800 and 14,000. By the time the last treatment was given, the patient showed a change for the better, smiled, talked, and complained about being with untidy patients. When placed in another ward, he improved rapidly.

Doctor Read does not attempt to generalize from the results obtained in these ten cases. However, he declares that in certain cases it seemed to precipitate an improvement, which, however, might have occurred later on without treatment. He advises its continuance until definite statistical results are obtainable.

RATS IN THE TRENCHES

That shrapnel, high explosives, Germans (or English—put in the word that suits you), and lice are not the only unwelcome visitors to the trenches, is shown by a communication to the *Paris Médical* (Jan. 22), contributed by Loir and Legangneux, who incorporate in their article a letter received from one Louis Morin, formerly the official rat-catcher of the bureau of hygiene of the city of Havre. These rats, it seems, are submitted to laboratory examination, in order to determine the presence of the plague-bacillus, which, fortunately, has never been found in that city.

Morin, at the beginning of the war, went to the front with his regiment, and now he sends back to his old colleagues in Havre a picture of himself, his clothing decorated with dead rats, which he calls "*un souvenir du front ou je suis toujours à la chasse*" (greetings from the front, where I am always on the

chase). "In 105 days," he writes, "I have killed 5437 rats." He adds that in the valleys of the Aisne and the Marne there are more rats than there are in Havre.

The authors remark (probably in defense of their city!) that, thanks to the food warehouses in Havre, rats are becoming more and more abundant, making it necessary to keep after them every day. For their destruction in large establishments, they employ the virus of the Pasteur Institute, which is placed in the runways of the rats. When it is desired to clean up a few rooms, as is most usually the case in the city, they use squills as a rat-poison. Following are the two formulas most employed for this purpose:

1. *Powder of squills and hashed meat.* This consists of equal parts of squills and hashed meat, made into little balls, of 5 Grams each.

2. *A paste of squills,* the formula of which is as follows:

| | |
|--|----------|
| Powdered squills | 5 Grams |
| Flour | 20 Grams |
| Powdered fennel | 20 Grams |
| Essence of anise | 1 drop |
| Ordinary fat, q. s., to make a hard paste. | |

Make up into cakes of about 10 Grams each.

The rats are attracted by the odor of the anise. This mixture is not dangerous for other domestic animals, but kills the rat very quickly.

TREATMENT OF SEVERE POSTPARTUM HEMORRHAGE

A novel method, which he employs for the immediate control of severe postpartum hemorrhage, is described by R. K. Howat. This writer points out (*Brit. Med. Jour.*, 1915) that two fundamental principles must be considered in these cases, the first one being, to exert pressure, (a) proximal to the bleeding area, and (b) local at the bleeding area; and the second, elevation of the bleeding area. And this is the way he brings it about, the procedure being described in connection with an imaginary case:

"The patient's appearance suggests the condition present. The bedclothes are at once thrown off and the quantity of blood seen practically clinches the diagnosis. With one hand the abdominal aorta is compressed—an easy thing to do through the lax abdominal wall, and one which should not require more than three seconds. Meanwhile the nurse is called to the bedside; and further assistance, if not in the room, is called for. The other hand separates the thighs and is then passed into the vagina.

The cervix is felt and grasped with moderate firmness, in order to steady it and so help the other hand in its next maneuver. As soon as this is done, the abdominal hand, leaving the aorta for the moment, "gathers" the relaxed and blood-filled uterus in its hollow, squeezes it, and presses it down in an anteflexed position against the vaginal hand, which meanwhile has been shut and moved into the anterior vaginal fornix. The anterior and posterior uterine walls are now pressed against each other by the two hands. At the same time some pressure, if thought desirable, is made on the aorta by the back of the wrist of the abdominal hand.

"While this is being done, an assistant places a pillow between the patient's head and the top of the bed, to act as a buffer. As soon as the uterus is gripped between the attendant's hands, the nurse lifts up the patient's pelvis as high as possible—practically to an angle of 60 or 70 degrees with the bed—that is, the patient is placed in the Trendelenburg position. The necessary counter pressure is given by the resistance of the bed-head to the head of the patient, who now rests on the back of her shoulders, neck, and head. All the above maneuvers need not occupy more than thirty or forty seconds.

"Meanwhile the additional help, which by this time has arrived, prepares whatever is necessary and available to maintain the Trendelenburg position, in order to relieve and set free the nurse. Suitable mechanical supports are pillows and the like, a partly inverted chair, and a towel or sheet as a sling from the bed-top. Others will readily suggest themselves.

"The above measures will, with practical certainty, secure the complete arrest of hemorrhage as soon as they are in operation. No other *local* treatment is attempted. But, if the patient's condition suggests danger from low blood pressure, then her arms and legs are raised to the vertical and held there by the assistants.

"When the uterus is felt to be firmly contracted (and on no account before this is so), the vaginal hand is withdrawn, and is then available for other purposes, a wet pad being applied to the vulva as the hand is withdrawn.

"As soon as uterine contraction and the patient's general condition are satisfactory, the pelvis is lowered to an angle of about 30 degrees and the abdominal hand removed, being returned from time to time, to observe the condition of the uterus. A binder is tightly applied. The patient is kept in this elevated position for as long as seems desira-

ble—never less than several hours—her legs being supported in a horizontal position. Whatever additional measures may be thought desirable for the maintenance of hemostasis and uterine contraction are applied, and suitable arrangements are made for the patient's general comfort."

SODIUM SALICYLATE INTRAVENOUSLY IN ACUTE RHEUMATISM

Some months ago we published formulas for the intravenous administration of sodium salicylate in the treatment of acute rheumatism, to be used either when the drug is not well tolerated when given by the mouth or when it is desired to produce immediate and pronounced effect. Our readers also recall the paper by Mr. Nielsen, published in our August (1915) issue, in which reference was made to the use of "salicylic-acid solution" in the treatment of tuberculosis.

We find another reference to the use of these intravenous injections in the treatment of acute rheumatism in the *Semana Medica* for December 23, 1915, in which Cernadas advises daily injections of from 1 to 2 Grams (15 to 30 grains) of sodium salicylate, the solution employed being as follows:

| | |
|------------------------|-----------|
| Sodium salicylate..... | 5 parts |
| Caffeine citrate..... | 0.25 part |
| Distilled water..... | 25 parts |

Of this solution, from 6 to 10 Cc. (100 to 150 minims) is given daily. The salicylate must be chemically pure, and the solution should be kept in the dark. According to Cernadas, this treatment is of special value when the remedy is not well borne by the stomach.

ALCOHOL IN PNEUMONIA

The following health note is issued by the United States Public Health Service and is printed exactly as received:

"The United States Public Health Service brands strong drink as the most efficient ally of pneumonia. It declares that alcohol is the handmaiden of the disease which produces ten percent of the deaths in the United States. This is no exaggeration. We have known for a long time that indulgence in alcoholic liquors lowers the individual vitality and that the man who drinks is peculiarly susceptible to pneumonia. The United States Public Health Service is a conservative body. It does not engage in alarmist propaganda. In following out the line of its official duties, it has brought forcefully to the general public

a fact which will bear endless repetition. The liberal and continuous user of alcoholic drinks will do well to heed this warning, particularly at this season of the year, when the gruesome death-toll from pneumonia is being doubled."

And so the United States Government is becoming a prohibition propagandist; for, in the last analysis, that is what it amounts to, doesn't it? If alcohol is dangerous to health and provocative of higher mortality in infectious diseases, it is assuredly something to get rid of.

ALCOHOL IN THE FRENCH ARMY

The antialcohol propaganda in France is growing in intensity. The topic has been discussed at a number of meetings of the French Academy, and, while apparently there are no prohibitionists in Paris, there are many who wish to see the alcohol evildrastically regulated. At the meeting of the Academy of Medicine on January 25, the topic was discussed by Debove, Gautier, Hayem, Linossier, and many others. All those taking part in the discussion were in accord in this conclusion: "As to fermented drinks, they may be consumed, expressly on the double condition of being taken only in moderate quantities (which, for wine, should never exceed a liter), and only when eating."

HEXAMETHYLENAMINE AFTER GALL-BLADDER OPERATIONS

In discussing a paper on gallbladder diseases read by Dr. Charles H. Mayo at a medical meeting, and which is reported in *The New York Medical Journal* of March 4, J. Lewis Amster laid emphasis upon the value of hexamethylenamine administered after gallbladder operations. On account of the danger of the production of cholecystitis and, realizing that the mere removal of the stone and drainage does not remove the underlying cause of this condition, he was of the opinion that the post-operative treatment should be considered as important as the operation itself.

Experimental study with hexamethylenamine has convinced Doctor Amster that this drug has specific germicidal action for the gallbladder and intestines and, therefore, acts as a powerful intestinal antiseptic and anti-fermentative. He has made it a routine measure, following these operations, to give his patients a small quantity of this drug, well diluted, and at frequent intervals.

This treatment has proven valuable after abdominal operations. His patients never

required catheterization, thirst was greatly relieved, abdominal distention rarely occurred, shock was lessened; and the only disadvantage is that the drug can not be administered by the mouth when there is persistent vomiting and unconsciousness. In that event, the hexamethylenamine is administered by proctoclysis, according to the same principle as the Murphy drip, but employing an acid medium, on account of the alkaline intestinal secretion.

OBSTINATE NEURALGIA CURED WITH EMETINE

Some really remarkable results were obtained by Alexander C. Howe (*Long Island Med. Jour.*, Feb., p. 57) in four cases of neuralgia of the head, all of which had resisted prior treatment on classical lines. While pyorrhea was not a decided factor in any of these cases, in all of them the entameba buccalis was found, so that Doctor Howe decided to give emetine treatment a trial. Following is his description of the first case treated, which, in the main, is typical of all the rest:

"On September 25, 1915, I was consulted by a man, age 43, for pain in one or both cheeks, extending at times to the forehead, at other times to one or both temples. This pain had been more or less constant for five years, but had increased considerably the past year. His teeth were frequently too tender to eat substances like beefsteak. During the preceding three years, he had spent about \$400 among dentists, with the idea that his teeth caused his pain. X-ray after x-ray examinations were negative. His general condition and neuralgia of the face and head were such that he was frequently incapacitated for business. He also gave a history of vasomotor rhinitis and general depression that is characteristic of entamebic protein sensitization.

"Examinations of nose, accessory sinuses, and throat were negative. His gums and teeth were far better than in the average mouths that give no trouble. Only a few pus-pockets were found. The gum margins were not excessively irritated. None of the teeth were loose. From appearances, his pyorrhœa alveolaris was so slight as to be a negative factor in his case.

"Microscopical examination for entameba showed the mouth and tonsils strongly positive, but the nose negative.

"He was injected with emetine September 25, at the time of his first visit. The injection was repeated the following day. On the

27th, he reported that he had been entirely free from pain since the time of the second injection, and that his teeth were so comfortable, he expected to tackle the first beef-steak he had attempted in two years. From that date to the present time, November 1, 1915, he has been entirely free from pain, practically free from soreness, of the teeth, and his symptoms of protein sensitization have cleared up."

We hope that readers of CLINICAL MEDICINE will follow this cue. It does not inevitably follow, of course, that the benefit obtained by the injection of emetine in these cases is due to the fact that the drug is an amebicide. We are beginning to suspect that there are physiologic reactions to this drug which we do not as yet understand. Some day, we hope, we may. At any rate, if it will cure intractable neuralgia even once in a while, it certainly is a good thing to have on hand ready for trial.

SODIUM GYNOCARDATE: A NEW REMEDY FOR LEPROSY

Thanks very largely to the brilliant work performed by Dr. Victor G. Heiser in the Philippine Islands, chaulmoogra-oil is now considered as probably the most valuable remedy we have for leprosy. Unfortunately this oil is extremely nauseating and it may interfere very seriously with digestion. To overcome these objections, Sir Leonard Rogers of Calcutta, whose great work in developing the emetine-therapy of dysentery has been pointed out repeatedly in these pages, has been using in its place gynocardic acid—also known as chaulmoogra acid—which is believed to be the *active principle* [please note!] of that oil. Since gynocardic acid is insoluble in water, he has tried both the sodium and the potassium salt; but the sodium gynocardate, seems, on the whole, to be preferable. Rogers has employed this gynocardate in doses of 1 to 2 grains repeated twice a week; although this dosage may be increased up to 40 grains in a day.

Doctor Rogers states that, while it is too early to say what will be the ultimate result of this treatment, he is gratified by the number of cases of leprosy, both of the anesthetic and the tubercular type, which have improved rapidly under the influence of the hypodermic injection of either of these salts; adding that this remedy has proven more effective than any treatment heretofore tried by him, including nastin subcutaneously and chaulmoogra-oil and gynocardic acid taken by

mouth. (Nastin, we may add, is a glycerin ester of a fatty acid secured from leprosy bacilli. It was introduced by Deycke and Reschad, in 1907, and formerly was considerably used in treating leprosy.)

PROPHYLACTIC VACCINATION AGAINST CHOLERA IN THE WARRING ARMIES

According to the Austrian and German medical journals, anticholera vaccination has proven a "brilliant success" in the armies of the central powers, so that, despite the numerous occasions for infection encountered, it has been possible to prevent the outbreak of an epidemic among any of the divisions, or, where at the beginning such an epidemic had started, to check it abruptly by means of general vaccination.

This accomplishment is being hailed as a triumph of science. One beautiful feature is that the injections are entirely harmless, the men continuing their arduous military duties without interruption. The rate of attack among the unprotected has been about fifty times as great as among those who were vaccinated.

VARICOSE VEINS NOT NECESSARILY DISQUALIFYING

An interesting instance of varicose legs is described (*Muench. Med. Woch.*, 1915, p. 462) by Military-Surgeon Gruener. A man of 28 years, of the "landsturm," who had not served, presented himself for examination, as ordered. He was of strong muscular build and vigorous appearance. However, the veins of both legs were so enormously dilated, that "they could not be imagined to be more so." All over the legs (left one the worst) these blood-vessels lay like cylinders of the "thickness of infants' arms," with smaller ones in between that fused into veritable knots, and these sending out a network of still smaller ropes and veinlets. These swollen ropes felt softish and could be emptied by stroking centripetally. The covering skin felt warm and there was no appearance of discoloration or scarring; neither of any edema. The feet pointed at the proper angle.

Naturally, the man was marked "high-grade unfit" for field service, although useful for light service without weapon. Seeing this marking, the man protested, avowing that a year ago he had won the prize for army-packing, also several athletic prizes. Yielding to his intense insistence to be inscribed for the infantry, the doctor put him

down as "fit, class two". But at this the man became almost furious, swearing that he was good for any kind of infantry duty. The doctor was so impressed, that he finally set him down as A-1. And he is now of the opinion that many a man having varicose veins has been pronounced unfit for labor when he should not have been. He suggests looking into such men's lives.

MECHANISM OF THE URINE SECRETION IN THE KIDNEY

A. Leschke, of the Second Medical Clinic of Berlin, has been conducting some intimate studies on the actual mechanism of the secretion of the urine by the kidneys, and has published his results in the *Zeitschrift fuer Klinische Medizin* (Bd. 81, II, 1 u. 2). His aim was, to learn which particular anatomical elements of the organ are responsible, respectively, for the elimination of the several constituents of the urine—urea, uric acid and other organic compounds, salts, and water—and under what conditions of concentration.

These labors, proving and disproving previous declarations and greatly extending actual knowledge in this highly important (both in a theoretical and practical sense) field, are extremely valuable to the diagnostician, but are of such a nature as not to yield themselves to abstracting. The object here is to call attention to this work.

ECLAMPSIA AND THE PUPERAL KIDNEY

In a communication to the *Zentralblatt fuer Gynaeologie*, W. Gessner advances the theory that the primary factor in the development of puerperal eclampsia is, the disturbance of the renal functions, while the toxic condition is the direct result of the latter. The injury to the kidneys, in turn, is caused by the heart being affected by a condition of stretching and tension, exerted, during gestation and accouchemen, upon the kidneys when they are held fixed from one cause or another.

As a correlative of the conditions assumed, rational treatment consists in immediate emptying of the womb, in order to get rid of the circulatory disturbances affecting the uropoietic system. Furthermore, when such puerperal kidneys are present, one of the kidneys must be freed from all tension and stretching by severing its ureter (the renal stump being implanted into the colon or, when possible, the verimiform appendix).

Citing the foregoing proposition, Doctor Traugott, a collaborator on the *Therapeutische Monatshefte* (April, 1915), expresses grave doubts as to the practical value of Gessner's operation in reducing the present mortality of 20 percent, while the probability of infection of the kidney from the colon is very great. Nevertheless, the main consideration is, the suggestion as to the etiology of the eclampsia.

THE NETTLE AS AN ECONOMIC AND REMEDIAL PLANT

At one time, the nettle was highly esteemed in continental Europe for its fiber, which was woven into a special textile that even now in Germany bears its name ("nessel") in the imitation weaves from other sources. With the introduction of new fiber-plants, it became a noxious weed. (As "dirt" is "matter out of place," so a weed is an herb for which we have no use—utilitarian or esthetic.) Now, however, under the present economic pressure weighing upon Germany, this plant seems to bid fair to assume a rank of higher importance than ever. This much, at least, we learn from the popular press of the central empires. An account of all the good things nowadays ascribed to the despised nettle, hitherto associated principally with the donkey and with the idea of discomfort, may not be without interest even to the readers of this journal.

First of all, the young nettle-plant, gathered in the spring and before blossoming-time, is represented as constituting the most important savory part of a farrago of wild-growing spring-greens utilized either in the form of salad or as a cooked vegetable dish, notably in combination with dandelion, sorrel, and acetosella. As a vegetable food, it is said to surpass all others in its content of the nutritive salts, particularly those of the bone-forming kind—a fact worth remembering, since the modern prevalence of dental caries and other constitutional maladies well may be ascribed to the limited consumption of vegetables and fruits rich in this particular. For this reason, German writers now urge the free use of the nettle as a food.

The herb, it is asserted, may be preserved the year 'round by drying on sheets and storing in dry places; and in the latter state it forms a delectable addition to soups, vegetables, dumplings, various meat dishes, and so on.

In handling the weed, it is best to wear gloves or else to use a "rose-clipper"; only the topmost leaves being taken from older,

tall plants. The latter, allowed to grow, will have blossoms and bear the needful seed—the nettle being an annual. The seeds are to be gathered by stripping the branches, the person wearing leather gloves.

Concerning this nettle-seed, it is said that it is the most valuable bird-food known; the seeds, not freed from the dry leaves, being fed to the birds, pigeons, and fowls. The part of the seed laid by may be sown in any place and corner not otherwise utilizable for growing other things, for, the nettles thrive on almost any kind of soil, in any spot; it does best, though, on freshly cleared land—a fact worth remembering. But nothing of this plant need go to waste, for it is rich in protein, and thus (best cut short) constitutes a highly valuable food for horses—unless the fiber (a beautiful strong silken floss) is to be utilized or the plant is added to the stable-manure pile.

Maybe some doctors in the rural districts, especially where women's and children's help can be had cheaply, will find a hint here more profitable than the questionable raising of ginseng and golden-seal. Just think of cartons of bird-seed and of culinary addenda, and such. However, this must be tried out; we merely repeat what we have read.

IS EMETINE A BACTERICIDE?

Since Frazier published his article relative to the abortion of typhoid fever with emetine, a number of investigators have been studying the bactericidal action of this alkaloid. Among these, Beckman, whose paper appears in *The Medical Record* of February 12 (p. 284), arrived at the conclusion that the subcutaneous administration of emetine hydrochloride, in 1-2 grain doses every six hours, does not impart any bactericidal properties to the blood, at least so far as the typhoid-bacillus is concerned.

The result of a very exhaustive and careful study of this question has been published by Kolmer and Smith (the latter professor of pathology in the University of Pennsylvania), who, in two articles contributed to the March number of *The Journal of Infectious Diseases*, discuss their attempt to ascertain, first, whether emetine is bactericidal *in vitro*, and, second, whether it is bactericidal *in vivo*. The amebicidal action also was studied, and the fact demonstrated without difficulty.

However, the action of the alkaloid upon bacteria, was not so easily determined. Still, their studies indicate that emetine certainly does exercise some bactericidal action, and

the authors ascribe some of the beneficial effects following the use of the alkaloid in conjunction with local treatment, in pyorrhea, to the fact that it is mildly bactericidal, although its principal value in the treatment of that condition undoubtedly must be ascribed to its power of destroying the amebæ fundamentally implicated.

We are particularly interested in this study, in view of Frazier's experience with regard to the bacillus typhosus. According to Frazier, emetine certainly does possess antiseptic and germicidal properties, but this fact becomes evident only if the bacteria are exposed to the remedy for a long-enough period. Given a solution of the same strength as phenol, emetine is from one to five times more efficient as a destroyer of microorganisms. However, its germicidal action is exerted much more slowly than that of the phenol, so that, to determine the full effect it is necessary to continue the observation over a period of ten days.

From a practical point of view, however, and considering the total amount of fluid contained in the human body and the exceedingly small percentage of emetine which therapeutically may be caused to circulate in this fluid, the conclusion of Kolmer and Smith is, that when subcutaneously administered the emetine is so slowly bactericidal as to be of little or no clinical value.

As to the treatment of pyorrhea alveolaris, with emetine, the authors give it as their opinion that it would seem that the logical treatment of this condition should consist primarily in its local application, but in conjunction with hypodermic injections, especially in severe infections or those accompanied by systemic complications.

To recur to the value of emetine in typhoid fever, we must say that, in our opinion, the problem is opened anew by these interesting papers by Kolmer and Smith. Even if the drug is shown to be only slightly bactericidal, the fact that it has the power of inhibiting and restricting development of the typhoid-organism would open up possibilities that cannot be disposed of immediately. We should have more light upon this subject.

HOW A SOLDIER'S WOUND-DRESSING PACKAGE SHOULD BE CONSTITUTED

After giving a description of the packages for emergency wound dressing, as supplied by the belligerent governments to their soldiers in the field, A. Lohmann, of Berlin, in the *Pharmazeutische Zeitung*, enumerates what he

considers the prime demands that should be met by these soldiers' pocket-packages, namely: (1) construction such that they can be opened easily; (2) the outer cover must be durable, impervious, and uninfluenced by sterilizing; (3) when opened, there must be no danger that the compress for covering the wound will come in contact with the hands—the principle of asepsis must appear throughout.

Inasmuch as, in the author's opinion, the emergency-packages supplied by the German war department most nearly comply with these demands, it would seem well for American practitioners to try to familiarize themselves with them, by securing specimens. He pronounces the French and Russian models as unfit, being subject, under any circumstances, to contamination.

ELATERIN-CATHARSIS FOR OBTAINING SPECIMEN-STOOLS OF TYPHOID CARRIERS

In a study of the results of examination of 290 specimens of urine and 298 specimens of feces, Tonney, Caldwell, and Griffin, of the Chicago Department of Health, reported in *The Journal of Infectious Diseases* for March (p. 239), their method of securing specimens of stools from individuals suspected of being typhoid-carriers.

As pointed out, typhoid-bacilli ordinarily are much more numerous in soft or diarrheal stools than they are in formed stools. Therefore, in order to secure specimens for examination, it is desirable to use a cathartic that will bring down the contents of the small intestine, where the organisms are most likely to lodge; the bacillus typhosus seldom being found in the colon.

The cathartic selected was elaterin, for the reason, first, that it is sufficiently powerful to empty the bowels thoroughly, and particularly, to bring down the contents of the small intestine, and, second, because it is devoid of antiseptic properties. The authors first used this cathartic in connection with a restaurant epidemic for which a waitress, who proved to be a typhoid-carrier, was responsible.

In this instance, three successive specimens of feces collected without resort to the elaterin-purge, were negative. Then this cathartic was administered, after which a fourth specimen was found to contain typhoid-bacilli; these being isolated without difficulty. This was the experience in many subsequent instances, and the conclusion arrived at was

that by means of elaterin-catharsis it is possible to secure stools with a maximum probability of carrying the infections.

Another very practical—and almost inevitable—conclusion of the authors is, that a typhoid-carrier is probably most infectious when suffering from diarrhea, and least infectious (perhaps not at all infectious) when not having diarrhea.

BACTERIN-TREATMENT OF CHRONIC SKIN DISEASES

In 70 cases of chronic skin disease, selected because other methods of treatment had proven failures, Dennis and Bufford (*Boston Med. and Surg. Jour.*, Dec. 16, 1915, p. 910) resorted to bacterin-treatment. The subjects were dispensary patients treated at the skin-clinic of the Massachusetts General Hospital and in whom the results thus far obtained seemed unjustifiably poor. Of these 70 cases, 35 were of acne vulgaris, 21 of furunculosis, and 14 of folliculitis.

In the treatment, both autogenous and stock bacterins were tried, in order to determine their relative merits. In order to exclude other influences, all external treatment was suspended while the patients were being vaccinated. The initial dose of the bacterins employed was never less than 100 million organisms. The dosage was gradually increased, however, so that the last injection often contained 2 billions. The total number of doses rarely exceeded ten, and the interval between them was from four to seven days. The administration, however, was governed by the local reaction at the point of injection, such as redness, heat, slight edema, tenderness upon pressure, these symptoms appearing within from four to twelve hours after administration and sometimes persisting as long as forty-eight hours. If this reaction did not occur either at the first or subsequent injections, a new bacterin was prepared and administered, the assumption then being that the right organism had not been selected or that the preparation had been injured in the process of manufacture. As a rule, the general reaction was very slight.

In addition to the bacterin-treatment, attention was given to the simple rules of hygiene, diet, bathing, and the like. Acne-patients were instructed to rub the lather of a nonirritating soap into the affected parts and follow this immediately with cloths wrung out of hot water. After this procedure, the comedones were very easily removed with a suitable instrument. This was

followed by the application of hot and cold cloths used alternately for five minutes. Pus was expressed when present.

The authors give at some length tables illustrating the results obtained in these different classes of cases. The examination of these tables shows the following facts.

Of all the cases treated with bacterins, 64 percent were apparently cured, 20 percent were benefited, and 16 percent received no benefit whatever.

The autogenous bacterins gave better results than did the stock bacterins, except in the treatment of furunculosis, in which no difference could be observed.

In acne, the best results were obtained in the indurated type. The comedo type responded less favorably, and the furuncular type least favorably of all.

The most favorable interval between doses was found to be five days in acne, four days in furunculosis, and seven days in sycosis.

Pure cultures of the staphylococcus albus were found in all of the cases of indurated and comedo acne, and in 7 of the 14 cases of folliculitis. Mixed cultures of the staphylococcus albus and aureus were found in 6 of the 7 cases of furuncular acne, in 3 of the 21 cases of furunculosis, and in 2 of the 7 cases of folliculitis. Pure cultures of staphylococcus aureus were found in 18 of the 21 cases of furunculosis.

The writers give it as their opinion that in furunculosis and in the cases of folliculitis in which treatment was successful, the bacterins were probably directly responsible for the results obtained, but this assertion cannot be proven to be true in the case of acne.

BACTERIN-TREATMENT OF ASTHMA AND BRONCHITIS

Robert H. Babcock writes that during the year prior to his report he employed vaccines prepared from sputum in 6 cases of bronchial asthma. Although a cure has not been obtained in every instance, the results, he declares (*Lancet-Clinic*, Feb. 12, p. 139), encourage him to believe that autogenous vaccines exercise a distinct and curative influence over the bronchitis which so often follows and perpetuates the asthma.

In one case, already reported in *The Journal of the American Medical Association*, a complete cure was obtained; 3 others of these victims were free from their asthmatic attacks for a time, although 2 of these have had a relapse. In only 1 of the 6 cases no benefit was obtained.

It is of interest to learn that, with one exception, the vaccines proved effective only when they contained an anaerobic fusiform bacillus, this being generally associated with the diplococcus mucosus and the micrococcus catarrhalis.

Doctor Babcock also reports a number of very interesting cases of bronchitis, generally occurring in patients suffering from chronic cardiac or other disease, in which benefit was secured from vaccination. One patient was a woman of sixty, with a blood pressure of 200, who contracted a severe cough which refused to yield to ordinary treatment. Her sputum was found to contain an almost pure culture of the bacillus mucosus, and upon a vaccine from that organism being injected, improvement occurred from the beginning, and a complete cure finally resulted. Several other cases were reported, in which benefit followed exactly the same line of treatment.

Doctor Babcock found that in bronchitis independent of asthma the organisms present in the expectorate mainly were the bacillus mucosus, the diplococcus mucosus, micrococcus catarrhalis, and a bacillus like that of influenza.

OPTOCHIN IN PNEUMONIA

The use of optochin in pneumonia, which has been touched upon once or twice in these columns, seems to gain ground in Germany and Austria-Hungary, judging from the multiplying reports from clinicians of those countries; and from among these we select the following experience told by F. Rosenthal (of an infectious-diseases hospital at Breslau) in the *Therapie der Gegenwart* (1915, p. 181)—emphasis always being laid by every reporter that the course with this drug must be started early in the attack. To be brief:

In two cases of croupous pneumonia, critical defibrillation set in as early as on the second day after beginning with the optochin, while all other symptoms were abating concurrently. In another patient, who was put upon this optochin-therapy, the fever and symptoms let up within thirty-six hours after his receiving the remedy. In still another, under similar conditions, the defibrillation occurred in lysis, but much sooner than ordinarily could be expected. However, one patient died on the sixth day; but, then, his condition was unusually grave from the very first.

The dosage was as follows: 8 grains of optochin three times a day or 4 grains every four hours, until a total amount of 72 grains

had been administered. The author did not combine this treatment with camphor, in any of these cases, for he thinks he has observed the latter to interfere with the chemotherapeutic action of the main remedy.

HEMORRHAGE IN A "BLEEDER" RELIEVED BY INTRAVENOUS INJECTIONS OF EMETINE

The following case is described by J. Frank Points in *The New Orleans Medical and Surgical Journal* for February (p. 520): The patient was a white male, age 50, who first discovered that he was a bleeder when he was a child and had a tooth pulled. Ever since, knowing his disposition to bleed, he has taken care not to wound himself. Not long ago, he had an attack of purpura hemorrhagica, and only two years before the present illness he suffered from hematuria that lasted ten days. On September 29, 1915, he noticed that he was urinating blood. His physician was called the next day, as the hemorrhage had grown worse. At this time, the urine was so bloody that it looked almost black, but the patient stated he felt well, had no pain in the bladder or in the kidney region, and that his urine flowed freely. There was no fever and the pulse was 80. Both cystoscopic and rectal examination were refused.

Doctor Points tried a variety of remedies, including injections of normal horse-serum, potassium citrate, urotropin, calcium lactate, chloretone, adrenalin, gallic acid, ergot, gelatin, and tincture of ferric chloride. All these remedies were given a fair trial, but (with the exception of the horse-serum) they produced no effect upon the flow of blood. Finally a second dose of horse-serum was suggested, and injected. As a result, the hemorrhage diminished about one-half, but did not stop entirely, as it did (for a short time) after the first injection of this substance. Within twelve hours, blood was flowing as freely as ever. In the meantime, the patient's blood pressure was going down lower and lower, until it finally dropped to 70, while the pulse increased to 135. Now we will let Doctor Points tell, in his own language, his experience with emetine.

"In my quest for a remedy, I read of the great results derived from the use of ipecac and its alkaloid, emetine, in cases of hemorrhage. I at once procured a supply of emetine in ampules of 1-2 grain each and gave my patient two doses a day, eight hours apart, subcutaneously. The subcutaneous

injection had no effect at all, the urine remaining as bloody as ever. The fourth day I began by giving 1/2 grain of emetine intra venously, selecting a large vein at the bend of the elbow. I repeated this injection that evening, eight hours later. Two more injections were given on the fifth day and one on the morning of the sixth day. During all this time the patient's urine showed no improvement. But, on the evening of the sixth day, the urine became so much lighter in color that in spite of all my entreaties I could not induce my patient to take another dose, he being firmly convinced that this was a favorable omen and the bleeding would now stop of itself.

"But next morning the urine was as red as at the beginning. The patient then declared his willingness to submit to my suggestions without any further question. I gave him two injections of emetine a day intravenously for two and a half days, and on the evening of the third day, as on the previous occasion, the blood diminished about one-half. But he was docile and took a sixth injection that evening, and a seventh the next morning. By that time, his urine looked almost normal in color, the albumin had reduced to 1-2 percent, and I decided not to give any more emetine until I would see him that afternoon. On my return his urine was perfectly clear, and it has remained so ever since, some six weeks."

In the final discussion of this paper, Doctor Points states that, in his opinion, emetine is a valuable addition to our armamentarium which is only just now coming into its own. He ascribes the favorable outcome of the case to the emetine treatment.

TYPHOID FEVER IN FRANCE

At a meeting of the Medico-Chirurgical Society of the Fourth Army of France, Boidin declared (*Paris Méd.*, Feb. 19, p. 212), basing his remarks upon personal observation, that the mortality from various typhoidal diseases had decidedly diminished since the autumn of 1914, at which time it reached 18 percent. In the summer and autumn of 1915, the mortality amounted to but 1.6 percent.

This reduction, Boidin believes, is the result of the progressive, and now nearly complete, disappearance of Eberthian (true) typhoid fever, due to the general introduction of antityphoid vaccination. At the present time, not more than 5 or 6 percent of the cases are of the true typhoid type.

Antityphoid vaccination, in the vast majority of cases, protects only against true typhoid fever, not against the paratyphoid. As a result, the latter condition now constitutes about 87 of the cases occurring among individuals who had been prophylactically vaccinated.

These paratyphoid attacks are, for the most part, very mild. Thus, for instance, in the hospital where Boidin was stationed, it had been observed that, while the mortality from typhoid fever varied between 14 and 17 percent, that from paratyphoid B reached only 6 percent, and that from paratyphoid A only 1.4 percent.

These reports, constantly accumulating from all the armies of Europe, have firmly established the prophylactic power of antityphoid vaccination. It is significant, moreover, that Castellani and also others are now giving combined vaccination, in order to afford protection, not only against typhoid fever, but also against the two forms of paratyphoid, and often cholera as well.

A NEW SIGN OF PULMONARY TUBERCULOSIS

A new sign of pulmonary tuberculosis, which is believed to be of considerable diagnostic value, is described by Dr. Clarence M. Wheaton in *The Journal of the American Medical Association*.

In his work at the clinic of Rush Medical College, Doctor Wheaton observed that the skin of tuberculous persons pulled away from the fascia was freely movable and non-adherent. This phenomenon was again striking in cases of early unilateral involvement, and subsequent examination showed that the sign was more clearly discernible on the tuberculous side, while in bilateral involvement there was equal distinctness over both lungs. The sign is elicited as follows:

The patient, with hands resting in the lap, faces the physician, looking straight to the front. The integument is then pinched between the thumb and index-finger and pulled away from the muscle-fascia. It will be observed that over the area of infiltration the integument can be drawn from the chest-wall with ease, as compared with the side where there is healthy lung, and if now rolled between the fingers it will feel in consistency much thinner than a fold of skin taken from the sound side.

This condition or change in the integument of the chest-wall has been observed in very

early cases of tuberculous infiltration, with little disintegration of the lungs, both in adults and children. Whether this is a true atrophy of the skin or due to muscle or nerve degeneration, or in some measure dependent on immobility of the chest-wall, Wheaton is at this time unable to say.

SIGNS OF IMPENDING DEATH

There are few single symptoms pathognomonic of impending death, writes Thomas F. Reilly in the *Journal of the American Medical Association* (Jan. 15, p. 160), but there are many striking symptoms which commonly precede death, and with these the physician should be familiar. We can mention only a few of those referred to in Doctor Reilly's exhaustive paper in the small space available in these pages.

Speaking first of pulse indications, Reilly says that a pulse which is irregular for the first time in disease is usually cause for grave alarm.

When the patient is in the recumbent position and the pulse disappears from the wrist for the first time, he rarely recovers, except in cases of true cardiac disease or in sudden, severe hemorrhage.

Pulsus alternans, when it can be appreciated by the finger, always means death within a short space of time—in cardiac disease, within, certainly, a month.

If the pulse of an adult is under 80, then it is safe to say that death is at least more than twelve hours away—but this is not always true of the aged, a slow pulse often being present in these patients up to the moment of death. On the other hand, in old persons, a pulse of 110 means death within a few hours, at most. In children, if the pulse is under 120, death is extremely rare within six hours. Even in coma, a pulse of 100 means that death is at least eight or ten hours removed.

In an adult, with the exception of paroxysmal tachycardia, exophthalmic goiter, pericarditis, and pulmonary tuberculosis, a pulse of 140, continued for more than an hour and not due to some accidental complication, means death. Except in pericarditis, any pulse gradually mounting to 160 per minute presages a fatal termination.

In general, in acute diseases, a pulse that is steadily increasing in frequency hour by hour portends early dissolution, provided other signs of serious illness are present.

Gallop-rhythm, not associated with rheumatic carditis, is always fatal.

In the case of a very ill patient whose pulse has been rapid for weeks and then drops down to 50 or 60, with no marked amelioration of symptoms, except in paroxysmal tachycardia, a fatal termination may be expected shortly.

A persistent, firm pulse in coma associated with hemiplegia is a fatal sign. In all infectious diseases, a sharp, strong, distinct pulmonary valve sound means that death will not take place for at least twelve hours.

Speaking of blood-pressure changes, respiration, and the like, Reilly makes the following observations:

When a very high blood pressure, say of 230, falls suddenly below 100, without any sign of hemorrhage, a fatal issue is in sight.

In an adult, a fall to 40 usually indicates a fatal outcome.

The appearance of well-marked Cheyne-Stokes type of respiration is practically always a sign that death is near, although it may be deferred for a few weeks. If there is associated auricular fibrillation, it does not have the same fatal prognosis as in other conditions.

If the heart will react to digitalis, the patient may recover and live for years, even if the Cheyne-Stokes phenomenon is present.

In any case, when rapid breathing follows the onset of Cheyne-Stokes respiration, death is at hand.

When there is marked disproportion in the length of inspiration as compared with expiration, the condition is very serious; and if coupled with a rapid pulse (except in shock or hemorrhage), the combination uniformly presages a fatal ending. A continued sighing respiration has much the same significance.

In a sick person, the persistent up and down motion of the Adam's apple, such as is seen temporarily in normal patients is the act of swallowing, means, according to the late Dr. John Shrady, a rapidly fatal issue. The phenomenon is probably due to failing of the vagus-center. It is so commonly associated with other signs that it is not of much value except when present in a sleeping patient.

The so-called "death-rattle" of the laity is positively a fatal sign.

The presence of black or bloody-tinged saliva running out of the side of the mouth in a comatose patient is an omen of death.

In the last few minutes of life, there sometimes is an enormous quantity of white frothy fluid flowing in a steady stream from the nostrils. When this occurs, death is only a matter of minutes.

In any very sick patient whose pupillary reflexes were previously normal, but in whom there is now no reaction of the pupil to light, death is at hand. To this general statement, there are some exceptions, namely, in the spinal myosis of the aged, in syphilis or its sequels, brain diseases, optic atrophy, fainting, and hemorrhage. A sluggish reaction under the same circumstances is serious, but not necessarily fatal.

In most diseases, just before death, the pupil dilates widely. Tennyson states this well when he says, "As unto dying eyes the hollow casement slowly grows a glimmering square," meaning thereby that the dilated pupil is unable to distinguish sharply the windowpanes.

A glazed pupil usually means that death is at hand. The presence of a film over the eye is always a fatal sign. The death-stare, or fixed eye, is probably due to the dilated non-reactive pupil, although sometimes, if the patient's attention is directed to it, he can actually count the fingers of the hand. It is a fatal sign.

When the eyes are half-open during sleep, the patient is not necessarily *in extremis*, but it is a sign of much gravity, especially if it is not due to prostration from diarrhea.

The well-known Hippocratean facies is an invariable sign of death. The features presented are: pallor of the face, pinched nostrils, sunken hollow eyes, collapsed temples cold and translucent ears with the lobes turned out, dropping of the lower jaw, haziness of the cornea, and fixed eyes.

A temperature of 108° F. is not recovered from except in heatstrokes. A temperature of 107 degrees lasting more than two hours is rarely recovered from. A rising temperature on the second day after the occurrence of hemiplegia is fatal. A temperature of 106 degrees in these cases at any time within the first three or four days means death.

Loss of sphincter control is always a grave sign, especially when coma is not present. When both vesical and rectal sphincters are paralyzed, recovery is uncommon, except in coma and nervous diseases.

The vomiting of frothy mucus mixed with blood, except in acute hemorrhage or in convulsions, is a fairly certain sign of approaching death.

Finally, to quote Doctor Reilly exactly, "In any disease, the presentiment of a fatal issue by the patient at the onset is a bad omen. This is particularly true if severe pain is not present. I have often tried to argue with the patient, in an attempt to eradicate this seem-

ing delusion from his mind, but, in most instances, I am sorry to say, the delusion of hopefulness really existed in my own mind. It gives me a psychic shiver when a patient who is well-balanced mentally and who is suffering from a serious but not necessarily fatal illness says, 'Doctor, I am going to die. I know it.' Likewise, when a patient shows no interest in a consultation held over his bedside, there is grave cause for alarm. When a uremic patient becomes jolly and joyous, a serious condition is present, and very often a fatal termination is near at hand."

THERAPEUTIC INDICATIONS FOR CORPUS LUTEUM

Preparations of corpus luteum (also called lutein—see "New and Non-Official Remedies," 1915 edition, p. 218) are still of rather undetermined value, although considerable interesting clinical work with this remedy has been reported. In *The New York Medical Journal* for January 29 (p. 227), Louis T. de M. Sajous says that no active principle of this body is available as yet, unless the lipoid preparations of Iscovesco are to be considered as such. The material now chiefly employed consists of dried corpora lutea of cows or sows, and this is administered in tablets, capsules or cachets, in 5- to 10-grain doses three times daily. The dried substance usually represents from five to six times its weight of fresh luteal tissue. Preparations collected exclusively from pregnant animals are considered most efficient.

Corpus-luteum therapy, says Sajous, has been used chiefly for the treatment of the disturbances of menstruation and in the correction of the various disorders of the menopause; the best results having been obtained in the climacteric group of cases in which such symptoms as "hot flashes," excessive perspiration, the psychoneuroses, vesical irritation, and digestive difficulties were most marked. In such cases, relief often follows the use of corpus luteum, although it is necessary to continue the remedy for some time, in order to secure permanency of results.

According to Dannreuther, pruritus vulvæ is sometimes relieved by this remedy; this author also advises the routine administration of this body prior to the menopause and following hysterectomy and oophorectomy. Menstrual disturbances amenable to corpus luteum include functional amenorrhea and dysmenorrhea of ovarian origin. Ac-

cording to Dannreuther again, it is particularly indicated in the treatment of these disorders in the slightly obese anemic type of young women who soon after puberty begin to complain of headache, malaise, nervousness, and constipation, together with scanty menstruation and possibly acne vulgaris. The remedy should be given in association with hygienic and tonic treatment.

Sajous advises corpus luteum in cases of dysmenorrhea showing symptoms of ovarian insufficiency, as indicated by irritability, malaise, depression, headache, and scanty menstruation. The drug has also been advised in the treatment of sterility, particularly when associated with infantilism of the reproductive organs, as well as for treatment of a tendency to repeated abortion and for hyperemesis in the early months of pregnancy.

THE TONGUE-SIGN IN TYPHUS

In view of the prevalence of typhus in Europe and the possibility that it may visit us in America, the following "tongue-sign," originally described by Funey and outlined in detail by Remlinger (*Paris Méd.*, Jan. 8, p. 42), is worthy to be kept in mind. This sign is as follows:

If a patient suffering from *typhoid* fever is requested by the physician to put out his tongue, he does so without difficulty, and so completely that it can be examined carefully.

On the other hand, if a patient suffering from *typhus* fever is requested to put out his tongue, the patient has great difficulty in so doing, and even then he can extrude the tongue only incompletely. As Remlinger says, the patient experiences the greatest difficulty in showing the tongue, which hardly passes the dental arch; in fact, it is often held beneath the palate and appears to be drawn back toward the pharynx. Sometimes there is simultaneously a slight trismus, provoked by contraction of the masseters.

VISCOSITY OF THE BLOOD

A. Gulbrink confirms the conclusions, previously arrived at by Holmgrens, concerning the question as to what determines the degree of the blood's viscosity; his investigations showing (*Beitr. z. Klin. d. Tub.*) that this depends solely upon the absolute number of polymorphonuclear leukocytes present. The number of lymphocytes in a given measure is without any influence. The viscosity of the fluid rises regularly with the increase of the particular leukocytes named.

Miscellaneous Articles

The Army of Peace and Conservation

MUCH has been said during the last year or so about preparedness, and putting our country in a condition to defend itself against attacks by external foes and maintain our national honor among the family of nations. Many plans have been suggested for carrying this object into effect, but none, so far as I have seen, goes to the root of the matter and has in view the most thorough training of our young men for the highest industrial as well as military efficiency and the best citizenship.

Every keen and thoughtful observer knows that a large percentage of our boys at the age of eighteen or nineteen years are entirely destitute of any adequate knowledge of the practical affairs of life and have never received the discipline and training necessary to fit them for the most efficient and best citizenship. How often have we been told recently that they would prove utterly inefficient as soldiers and that it would take a year or more to drill them into a proper state of efficiency. This may all be true, but I want to add that the same thing applies to their entering upon the other vocations of life.

It may be asked, How can these weaknesses and inefficiencies be corrected? My suggestion is as follows: Pass a federal law organizing a great army of peace and conservation of the nation's resources. Draft every physically fit and able-bodied young man at nineteen years of age to serve for two years in this army. This ought to furnish from one-half million to a million men each year. This great army could be divided into several divisions, or departments, as follows:

1. *The Department of Hygiene, Sanitation, and Health.*—This army should be put to work under the direction of competent experts, to drain and reclaim the marshes and swamps of our country and kill off the rats, gophers, prairie-dogs, as well as the mosquitoes, fleas, flies, ticks, and other insect-pests that carry infection and propagate malaria, plague,

yellow-fever, typhus, typhoid fever, tuberculosis, and various other diseases.

Do not sneer at this, please, because it is not designed principally to protect horses, cattle, hogs, sheep, poultry and other animals, although it would protect these also; and because it has no superficially apparent financial foundation, for if properly carried out this work would inaugurate in our country such an era of prosperity as the world has never seen.

According to the census of health reports for 1913, over one-half million people died during that year in the United States from preventable diseases. When the economic value of these lives is computed and in addition to this the loss from sickness with all its attendant expenses, the lost time and impaired efficiency of the workers, are added, we have a sum which amounts to two or three billion dollars in *one year*. Under proper hygienic living and sanitary regulations, in a few years, at least half these lives could be saved and much of the suffering and disease as well as poverty could be banished from our nation, and leave us a saner, healthier, and happier people.

2. *The Good-Roads Army.*—Another division of this army should be put to work making a complete system of good roads all over the country. What this would mean in comfort, pleasure, and profit to the automobileists, farmers, and everyone who travels on roads, only those who experience the annoyance, discomfort, and losses arising from the condition of the nation's roads at the present time can appreciate.

3. *The Flood-Preventing Army.*—This department should construct, in the Mississippi, Missouri, Ohio, and other river valleys and along the headquarters of the streams, a system of reservoirs, to store all flood-waters. This not only would do away with the loss of life and property caused by floods and save the great yearly expense for repairs on the rivers, but would furnish water for irrigation and power purposes when the rivers are low.

This is no mere visionary dream, as the plan was carefully worked out by one of the best engineers in the country, a few years ago, and found to be perfectly feasible.

4. *The Reclamation Army.*—This army should construct the great reservoirs, to reclaim the arid lands of the country. It should look after the forest-reserves, save the fallen timber, remove brush and other waste materials, and make the occurrence of forest fires, such as are destroying many lives and millions of dollars worth of property every year, an impossibility.

5. *Military Preparedness.*—In connection with each one of these armies, there should be a corps of officers, to instruct the young men in military drill and tactics, and an hour each day or a half day each week should be devoted to this work. If every Saturday forenoon were devoted to military drill and the Saturday afternoons were given to the young men to enjoy themselves in games as football, baseball, and other field-sports, I believe they would enter into the work with pleasure and vim and make it a great success.

Under such a system as this, a large body of young men not only would receive adequate military training, but they would, in addition, receive that valuable manual training and discipline so necessary to fit them for the work of the world, no matter what vocation they might elect to follow. They would also retain a true perspective of the relative importance of the military and civic function and would not idealize and exalt the position and calling of the soldier above their true place.

Under proper management and control, they would, at the end of two years, pass out of the army a strong, healthy, disciplined body of men, to enter upon the industrial and professional work of the nation. They would become reserves, and for a certain specified number of years would be required to devote a certain amount of time each year to military drill and be subject to the call of their country when it needed their services. In five or ten years' time, our country would have from five to ten millions of trained men; her health conditions and all her natural resources would be improved to an enormous extent, and she would stand as an example to be emulated and imitated by the whole world; and, while accomplishing all these beneficent results, ordinary labor would not be interfered with, because thousands of masons, bricklayers, carpenters and other mechanics would be required to assist in the work and to instruct the young men in their respective industrial work.

The above plan would not interfere with Lieutenant Steever's system of military training for high-school boys so successfully carried out in Wyoming during the last few years. Indeed, it would supplement and give an impetus to it, because it would be an inducement for many more boys to enter and complete the high-school course and, by taking the Steever system of military training, secure exemption from service in this peace army.

E. STUVER.

Fort Collins, Colo.

A POEM BY DR. JAMES H. FERSTER

In the March number of *The Journal of the American Veterinary Medical Association*, we find a notice of the death of one of our old friends, Dr. James H. Ferster, of New York City. Doctor Ferster was one of Manhattan's most prominent veterinary practitioners. A glimpse of his character may be obtained by reading the following poem, which he contributed to *The Trotter and Pacer* some months ago. This poem was written only a few weeks before his death:

I place one hand in God's and then I know
I cannot fall; and then, as far below
As I can reach, I stretch my other hand
And in the slum and depth of wickedness I find
A fallen fellow man. I shout: "Hello!
'Tis Christmas morn—look not below,
But up." I grasp his hand and hold it tight
As mine is held by Thee, and pray for might
To help me put his trembling hand in Thine.
Then Thou wilt draw him by Thy power divine
Unto Thyself. Then he, like me, will stand,
One hand in thine, the other stretched toward man.
For, he can reach some man that I cannot;
He knows some tender chord I have forgot.
And, as I see him lift and place some other's hand
In Thine, I quietly give thanks that Thy great plan
For saving man is through his fellow man.
Give thanks for more: give thanks that God saw fit
In saving men to let me help a bit!

AN OMISSION FROM DOCTOR COPE'S ARTICLE ON NOSEBLEED

Dr. C. S. Cope, of Detroit, has written us that, unfortunately, there inadvertently was omitted an important sentence or paragraph from his article on nosebleed, as printed in our February number (p. 179). In the directions for plugging the nose, the article should have read as follows, which the reader may correct in his copy of CLINICAL MEDICINE:

"Moisten a small pledge of cotton with vinegar, and push up into the nose; and at once take the remaining dry pledge and close the other nostril. You now have, as it were, a cork in both ends of the bottle. The ends

of the strings are carried up over the cheek and made fast with a small piece of adhesive plaster. Cut off the redundant ends and the work is done."

AN ECHO FROM THE DARDANELLES

You have expressed a wish for a reply to your last notice concerning your journal and were wondering why Doctor Wilson hadn't renewed his subscription.

Doctor Wilson left for the front last July and has been most of his time at the Dardanelles, where he has seen and endured many of the terrible sights and sounds of this terrible war. Recently he was put on a hospital-ship and, although the dangers are greater and he has as many as 160 patients to look after, he has more comforts and better food.

The Doctor will no doubt subscribe for the journal on his return (D. V.), for his appreciation of the value of your magazine would be proved to you if you saw how he treasures each copy and the many helpful thoughts and suggestions he has gotten from CLINICAL MEDICINE.

MYRTLE WILSON.

Toronto, Ont., Can.

HEROIC QUININE DOSAGE IN PNEUMONIA

During the winter of 1883, Prof. A. B. Palmer, for thirty years dean of the University of Michigan, and professor of practice of medicine, included in his lecture on the treatment of pneumonia the treatment given below in abstract. I have followed the treatment since then and found that in almost all cases it results in speedy recovery, just as indicated.

I am firmly of the opinion that this treatment is abortive and that the quinine is destructive to the pneumococci. Usually the patient does not respond for from one to three days, but when the symptoms suddenly disappear the patient is convalescent. I have found that such patients bear the quinine well and that it is followed by but little, if any, unpleasantness. I have used it in even larger doses, even in very small children, and have seen patients with symptoms of the most alarming character respond to the treatment and make speedy recovery.

The extracts from Professor Palmer's lecture are as follows:

"The particular method in the treatment of common pneumonia, which for the last

several years I have pursued with such results as strongly to recommend it to others, is briefly as follows:

"When called to a patient within twelve to twenty-four hours after the chill or at any time before any considerable exudate has occurred, I immediately give from 6 to 10 grains of quinine, together with 1 I to 1-3 grain of morphine, which almost invariably in a short time (from one-half to two hours) induces free perspiration and reduction of temperature. I then repeat the quinine in doses of from 4 to 8 grains in from two to three hours and, unless all pain and especially uneasiness is relieved, I add another dose of morphine in four or six hours; but, by all means, continue the quinine in one of the last-mentioned doses until from 30 to 50, or sometimes 60, grains are given. Sometimes from 20 to 25 grains will be sufficient, given in these divided doses, or, if preferred, in doses somewhat smaller but more frequently repeated. But, as the larger quantity is innocent and may be needed, I prefer to give at least 30 and often as much as 40 grains in from twelve to twenty-four hours.

"The effects desired, and certainly as a rule produced, are: a decided reduction of temperature, a marked diminution in the frequency of the pulse, a decided moisture of the skin or free sweating, a slower and more easy respiration, a relief from pain and feeling of fulness in the chest, a diminution of the cough and of the tenacious and bloody character of the expectoration; in short, not only is there a checking of the fever, but of all the evidences, general and local, of the pulmonary engorgement and inflammation, and the quantity of medicine to be given will depend much upon the completeness of these effects produced.

"The slight deafness and ringing in the ears which may or may not result from these doses is a matter of very little consequence, almost always quite temporary, and should have no influence in determining the quantity given. A small quantity of quinine will produce the phenomena in some, while large doses will fail to do so in others, and neither in pneumonia nor in ague are they the measure of the medicinal effect of the remedy or the index of the quantity that will be required or borne.

"As a rule, the treatment required after this will be a general laxative or, if the tongue is much coated, a few grains of blue mass, followed in a few hours by a mild saline cathartic, and this, in turn, by some mild eliminative treatment.

"There may be cases, however early undertaken, that will resist this treatment, but in those occurring under my observation the results as indicated, where the plan has been fairly and thoroughly carried out, with scarcely a well-marked exception, have followed. These cases have been virtually aborted—convalescence speedily occurring, and nothing but a moderate congestion of the lung remaining and this only for a few days.

"If the treatment be commenced much later, and especially if hepatization has occurred and the dyspnea is marked, the morphine must be omitted or given with more caution, the quinine to be given in the same way; the result very generally being, to bring down the temperature and check the extension of the disease, but, of course, not so speedily as to remove all its consequences. And, if marked structural changes have occurred, time will be required and the continuance of more or less pathological action before the lung is restored to its normal state.

"At whatever stage the patient is seen, the quinine in these free doses should be given and the full physiological and therapeutic effect as described should be obtained.

"Even when this treatment is commenced in the hepatized or more advanced stages, the subsequent course of the disease is usually materially shortened, rendered milder and less dangerous.

"Should this treatment in any case fail to produce all the results claimed, it will be harmless at least and other remedies may be used to conduct the case to a favorable termination. A repetition of the quinine and the use of the other means will generally be required when the treatment has commenced at an advanced stage of the disease."

"L."

Kansas.

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[The preceding letter is of special interest at the present time, in view of the great interest being taken in the use of optochin, or ethylhydrocuprein (a quinine derivative) in the treatment of pneumonia. This "quinine" treatment was discussed at some length in Doctor Biehn's paper, published in our December number. An abstract describing German experiences with this remedy will be found on page 350, this issue. The trouble with the optochin is that, while it is exceedingly deadly for the pneumococcus it is also a little too toxic for *homo sapiens*—hence the efforts to intensify its activity by conjoint serum treatment.

The commonly used quinine salts have been employed in treating pneumonia by several generations of physicians, and so many have spoken well of its action in this disease that we are not disposed to be too skeptical. I fully believe it has merit, though its usefulness is limited. It undoubtedly stimulates leukocytosis, and we all know the importance of that phenomenon, and the grave prognostic import of a low leukocyte count.

Personally, I should not feel like "resting my case" on the action of quinine. We need the defervescent alkaloids, aconitine, and veratrine, supported by strychnine and digitalin according to indications. These I consider vitally important. Also, we need eliminants, intestinal antiseptics and bacterins. However, I will not try to go deeply into problems of treatment here.—Ed.]

THE CONFESSION OF AN UNSUCCESSFUL PRACTITIONER

Here I am, 55 years old. I am a little fellow, 120 pounds; never did any hard work, and don't look my age by ten years.

I was graduated, at 24, from a very good school, requiring three courses of five months each, some thirty years ago. I did not know much about medicine when I received my sheepskin, but I could talk glibly on medical topics and got the credit of knowing more than I really did.

I began practice in a little Kentucky sawmill-town, because there were no other doctors there. That was a mistake—don't you ever do it. One thinks he can pick up a little ready money and then go to another location. The former is questionable, the latter is true, but it is a waste of time. Go where you want to live, and fight and starve it out. This is the better way in the long run.

I stayed there, in that sawmill-town, two years, got some valuable experience, familiarized myself with the physical and clinical properties of drugs, and made expenses. One incident will illustrate how I got experience.

A baby in the neighborhood had been given up to die by the old attending physician. My medical education regarding these diseases of children had been very meagre. I had had only a few lectures on pediatrics, and as I was not interested in children, I had paid very little attention to them. Well, the old women decided that the "young doctor" might be able to do something. As I knew very little of medicine and nothing of children, I had nothing to lose. I remem-

ber now that I administered minute doses of bismuth and saccharated pepsin, stopped all food, looked as wise as I could under the circumstances, said very little (didn't know what to say), and took my departure. The child got well. No, I did not cure it—I said, *it got well*. I was a hero. Suddenly my reputation was established. Alas for my ignorance, people began to send for me for their sick children. Then it was that I got down my old neglected Smith and went at it. The more I studied that book, the better I liked it. I began to notice children, to take an interest in them, and I began to like them, too.

My practice grew, and years afterward I was known as a great baby-doctor. I finally gave that work up, because the people who needed me worst were the least able to pay; and I had to make a living; so, I drifted into other lines. So much for that.

My next location was in Florida, where I formed a partnership with the leading doctor. He had a large business, was popular, but careless about his collections. As I was a poor mixer, I took charge of the books, looked after the collections, and did a little work. Most of the real money, however, came from the old man's clientele, so, after a year or two, we dissolved the partnership and I tried it alone.

About this time, I had some family troubles, and, as I did not know the trick of getting practice, I soon fell behind, closed my office, and returned to Kentucky. Here, I opened a practice in a small school-town, where I remained two years, saving up about two hundred dollars.

I took this money and went to a boom-town in the eastern part of the state, where I invested in real estate. In five months, I had about five thousand dollars' worth of property, a good drug store, and was prosperous. My store burned, the town went down, deferred payments came due, and I left in the fall for the west with fifty dollars that my brother had loaned me.

After roaming around about a year, doing such things as I could, I found myself in a western city, where I got a job in a hospital that had about a hundred beds. I remained here a year, learning more medicine and surgery than I ever knew before. Then the city administration changed and I was let out. My salary, \$50 a month, I had loaned to the nurses, at interest, and when I was deposed they beat me out of all of it.

Then I came south to my present location, arriving here with a five-dollar bill in my

pocket. I formed a partnership with the leading doctor, and we prospered. I had lived well and, besides, at the end of a year, had two hundred dollars in the little Jim-crow bank of the town. Our local bank failed and made an assignment, so, I lost that little accumulation.

My partner knew very little of medicine, but he was quite a society man, a good mixer and dresser, and we had a good business. I did most of the surgery, and when he or we had a bad case it was I who burned the midnight oil, worrying over it and pulling back to life many who would have died but for my special effort. At the end of five years, I had enough of it—me doing the work, he getting the credit; for, as I said, he was a good mixer, and it was a fact that I would explain a perplexity to him and he would explain it to the family much better than I possibly could.

I then opened an office for myself, which I maintained about two years. Then I went to Europe for a year. I lived in Paris and attended the famous clinics of that gay city. I returned home and resumed practice. During all these years, I was a member of the medical societies. I paid my good money to the railroads, to attend the meetings, while the other doctors rode on passes. I read papers that were well received, and I was often on for a humorous toast at the banquets. I also wrote some for the medical journals—thankless task. My practice was never large, for I always disliked exertion; still, it was adequate for all my needs and I invested the surplus in local real estate. This was another error. For, property went down and taxes went up; deferred payments fell due and I had to borrow from the banks to meet them, and then I had to hustle to meet the interest; in the end, being forced to sacrifice some of it in order to meet the principal; so, instead of growing richer, I became poorer.

Then—would you believe it?—I got married, and now real expense began. Before this, I could sleep in my office, eat at some restaurant where they owed me, and could get along with very little money when practice and collections were slack. Now, though, I had to have a house, a home, a 'phone, light, heat, fuel; had to provide groceries and clothing for two, and these of better quality than I had had before. Consequently, I made no headway in getting rid of my debts—on the contrary, was forced to sacrifice more of my property in order to meet the deficit.

Before marriage, I had been in the habit of going away every year to some large city, to attend the clinics, or to California or Mexico; also to buy any new book or journal that I fancied. Now, the only traveling done by our family consisted in the visits of the wife to her parents living in another state. I myself remained at home.

I grew morbid. I hated the people who hired me but never paid. The very 'phone got on my nerves. Someone would ring up and say, "You are wanted down at So-and-So's." "Wanted!" just as though I were a thing to be whistled for, like a dog. By and by, a strong aversion to general practice grew on me; besides, I was getting disgusted with medical societies and the unethical doings of doctors. They talked against commissions paid to druggists, but paid them; they had fits if a member's name appeared in the papers, but they advertised in sundry and divers indirect ways. Then they went surgery-mad and began to cut everybody that had the price. What I mean is, that those standing highest in the societies did these things. Later, those who could not operate, because they had had no training, took up the surgical work, and they began to learn on their patients. It was awful. Yet, I venture to say that my town is no worse than any other. The country has gone surgery-mad.

Don't understand me as opposing legitimate surgery—as a matter of fact, I did the first surgical work ever seen in this town. But, I had a rule that was a hard one for me to get over, and that, moreover, has got me into my present "bad fix." This rule was the old fashioned Golden Rule, never to do to another that which you would not be willing to have done to yourself if your position with regard to the patient were reversed. This rule of justice has kept me from making much money; but, at least, it is not the thought that I cut off someone before his time that keeps me awake nights. The following may serve to exemplify my meaning:

A married woman came to me for treatment, and it looked as though she had to have an operation (the nature of the trouble is not material here), and I told her so. She was willing. The price was agreed upon. As the condition was not an urgent one, I sent her home with a reconstructive, feeling that she would make a better recovery for preliminary treatment. She returned at the specified time, bringing the money with her, one hundred dollars. An examination proved that she was so much better than when she

left me that I told her that she did not need an operation. How many other doctors do you know—poor fellows like me—that would do this thing?

You think, no doubt, that I am making myself out a pretty honest sort of fellow. Right you are. I am honest. That is why I am so darn poor. And now the high tide of practice has moved on past my door.

I am making an effort to do a little chronic-disease work, which I can do in my office without going out. I can not compete with the younger men—I do not understand the microscope. I am rusty as an operator and fear to attempt operating, even if I could get suitable cases. I cannot go out nights; besides, only those who cannot get a doctor with an auto-car will call me, and they are no good.

My position is similar to that of many other doctors in this land of ours, who, having given the best years of their lives to their profession, now find themselves laid on the shelf before they are incapacitated.

What are we to do? I could still do office-work, if I could get the patients. I am particularly strong on curing piles and well fitted for doing that work, but those victims who have money go elsewhere, while those who are broke make unreasonable demands, besides being more ungrateful for what you do for them than those who pay.

Pauper practice is a most undesirable practice. Mark that down. If you make good, they will send you more of their stripe; if you fail, they will ruin your reputation, if they can. Pauper surgery is even worse; for, these people will get a shyster lawyer to sue you for malpractice, and the average hayseed jury will give a verdict against you. Even if you are financially protected by an insurance company and do manage to win the suit, the very fact that you have been sued will injure you in the community.

Again I ask, What can we do? I know no other trade. My wife thinks I could make a living at writing. Well, maybe I could, if I had begun earlier. But, at my age, it is one thing to write a rambling letter to a medical editor, who is used to revising the MSS of the average country doctor, and quite another thing to write an article for a lay magazine for which you expect real dollars.

Farm or garden? I don't know the first thing about either; besides, I am not strong enough to do manual labor, neither do I have the inclination to do aught but the chores and tend the horse—which latter I sold

pending the time when I can "afford a car."

I still owe \$500, and it seems that I am now at the end of my tether; can't even keep up my subscription for my medical journals. And, yet, I "put up a good front," as it is not well to show the world. Folks in this town don't really know just how hard up I am.

Alas, I wonder how many other old boys who may read these lines will recognize in my situation their own as well.

"ROY RAY."

[This is a real letter from a real doctor, who prefers to hide his identity under a pseudonym.—Ed.]

THE PESSIMIST

Dr. J. L. Vaughan, of Brooklyn, New York, writes us as follows:

"When in the February number of the journal I read 'The Optimist,' by Milton Ruggles, the enclosed poem, which may be titled 'The Pessimist,' immediately came into my mind. I am sending it to you, in the hope that you will publish it in CLINICAL MEDICINE."

Here is the poem, which, by the way, is good stuff:

Gloomy and despondent, full of dreadful fears,
Joy today and sunshine, nought his spirit cheers;
Fearing, doubting, dreading, his hopes are but few—

This is the pessimist.

Does this mean you?

Never any laughter, life too full of wo,
Looking on the dark side as days come and go.
Losing sweets of friendship, and its blessings, too—

This is the pessimist.

Does this mean you?

Forever crossing bridges that his feet will never
reach,
Learning not the lessons that Father Time would
teach,

No trusting in the future, can neither dare nor do—

This is the pessimist.

Does this mean you?

MEANING OF THE INDIANA ANTINARCOTIC LAW

In your February issue, I notice, on pages 110 and 111, an article concerning the Indiana Anti-Narcotic Law. As secretary of the Indiana State Board of Veterinary Medical Examiners, I submitted to our attorney-general the following:

Dear Sir: The State Board of Veterinary Medical Examiners would like a ruling on the following provision in the state law governing the sale of narcotics:

That nothing in this act shall be construed to prevent the legitimate administering of said drugs, their salts, compounds and derivatives by a duly registered practicing physician, duly licensed veterinarian or duly licensed dentist.

"We desire an opinion on the meaning of the words 'legitimate administering.'

"Under the provisions of this law, the State Board of Veterinary Medical Examiners may be called upon to revoke licenses, as one of the penalties for violation is the revocation of the license held by the offender, and in this way, should the matter involve a veterinarian, the question of the offense and penalty would come before our board.

"That we may be prepared to deal with the matter and answer questions submitted to us, we ask for this opinion."

To the foregoing, I received the following answer:

My Dear Sir: I am sending you enclosed a copy of an opinion of Attorney-General Thomas M. Honan, made on the 28th of January, 1913, which I think fully answers your inquiry.

EVAN B. STOTSENBURG, Attorney-General.

HONAN OPINION (COPY)

My Dear Sir: In reply to your questions concerning the effect of certain provisions of House Bill 277, known as the Keegan Bill, I beg to say that the provision prohibiting any person, except a licensed pharmacist, to retail, sell or give away cocaine, etc., does not prohibit the *bona fide* use or administration of such drugs by a licensed physician, dentist or veterinarian in his practice. It is my opinion that *bona fide* dispensation, use or administration of such drugs by a physician, dentist or veterinarian in his practice is neither to retail, sell or give away such drugs.

Furthermore, the bill contemplates that a licensed physician, pharmacist, dentist or veterinarian may buy such drugs of the wholesaler, jobber or manufacturer. In giving the physician, dentist or veterinarian this right, the bill contemplates that the physician, dentist or veterinarian may lawfully use such drugs in other ways than to retail, sell or give them away.

Yours, etc.,

THOS. M. HONAN,
Attorney-General.

If you will get an abstract of an opinion given by the United States District Court, Western District of Tennessee, dated June 1, 1915, you will find there is no limit upon the quantity which a physician may dispense, provided such dispensing is to meet the immediate needs of the patient and is made in good faith and as a medicine.

A summary of the judicial interpretations of the word "administer" will be found in the cases of McCaughey vs. The State, 156 Ind. 41. People vs. Quin, 50 barb. (N. Y.) 128; La Beau vs. People, 34 N. Y. 223; Chandler vs. State, 105 Pac. 375;

Burris vs. State, 84 S.W.453; State vs. Jones, 53 Atl. (Del.) 958; Filber vs. Dauterman, 26 Wis. 518; Blackburn vs. State, 23 Ohio St., 146.

I wish to submit the above, hoping that it will help your readers and yourself in answering some of the questions asked you about the Indiana Law.

HARVEY J. KANNAL,
Secretary of the Indiana State Board of Veterinary Medicine.

[This correspondence will interest every Indiana reader of CLINICAL MEDICINE, and doubtless many living in other states. The opinion of the attorney-general is clearly set forth, and should set at rest the lingering doubts of physicians who are being intimidated by the suggestion that it is illegal for them to dispense narcotics in Indiana. Our advice is for every such physician to go straight ahead with his practice along usual lines. Obey the law strictly, *do right always*, and tell the scare-mongers and trouble-threateners to go to—!—ED.]

EMETINE IN TYPHOID FEVER

My cases of typhoid have all completely recovered under the emetine treatment, which more than pays me—thanks to CLINICAL MEDICINE.

As long ago as 1872 I remember reading in Beck's "Materia Medica" the statement that, "of all the medicines in the *materia medica*, there is none that has so salutary an effect on the intestinal mucous membrane as ipecacuanha." I believe this statement. Ipecac stands in about the same relation to intestinal maladies as quinine does to fevers in general. While specific in some cases (or diseases), it is inhibitory in others.

Some time ago a woman came to me suffering with muscular rheumatism. I gave her six hypodermic doses, 1-2 grain each, of emetine hydrochloride, with complete relief. Her trouble was evidently due to intestinal intoxication.

I have had excellent results in a case of enterocolitis in a child two years old. The temperature dropped from 106° F. to normal in twenty-four hours after two injections of emetine; at the same time I gave Dover's powder by the mouth and high injections of normal salt solution. This is important, as it washes away the mucus and detritus which would keep up the source of poison. This patient has completely recovered. The child was sick about two weeks. These cases often

terminate in death, or recovery is very protracted.

I am of the opinion that this treatment would have come into general practice long ago, but we did not know how to give the remedy in sufficient dosage. As advised by Loomis, I used to narcotize my patient in order to so blunt the sensibility of the stomach as to make it hold the ipecac. I have gotten good results, but one dislikes to put his patient through this ordeal. Thanks to emetine hydrochloride, this method is no longer necessary.

I thank Doctor Frazier for bringing this emetine treatment of typhoid-fever to light.

H. H. SMITH.

Lexington, O.

"TROUT FLIES"

This is the title of a little book published by the Northern Pacific Railroad and prepared very largely by a good friend of every reader of CLINICAL MEDICINE, Dr. Charles Stuart Moody. It tells all about trout fishing, and also something about bears and other game as found in the lakes, streams, and mountains of northern Idaho. Every doctor who is planning to take a vacation this summer and hasn't fully decided where to go should get a copy of this booklet. Write to the nearest agent of the Northern Pacific Railroad or directly to Dr. Charles Stuart Moody, Hope, Idaho.

A PORTABLE HOSPITAL

Kindly give me a rough idea of a portable hospital for 750 men. About two percent, or fifteen men, is a moderate number to be confined to the hospital at any one time.

"CONTRACTOR."

Montana.

We referred "Contractor's" letter to Dr. John A. Hornsby, editor of *The Modern Hospital*, of this city, and asked him to give us the benefit of his advice. Doctor Hornsby's letter follows:

"Perhaps the best answer that I can give to this gentleman is to tell you what I myself did in a similar situation. I was employed in 1899-1900-1901 as surgeon for the White Pass and Yukon Railway on the construction of 125 miles of railway from tidewater to the head of the Yukon river, on the south-eastern coast of Alaska. I was directed to make out a list of requirements for feeding, housing, nursing and providing hospital care

for a maximum of 5000 men, and I was informed that I was to make out the complete inventory of all food, clothing and housing paraphernalia to last at least for one year, because it was entirely possible that after winter closed down we would not be able to get new supplies until the following summer. It is unnecessary for me to tell you any of the interesting incidents of this Arctic service excepting in regard to our portable hospitals.

"We housed all of our sick in tents, and usually these tents were made of standard size 20 x 40 feet of 12-ounce duck. We bought them already made up, and whenever we opened a railroad camp we set up one of these tents as a part of the camp equipment. It was built as follows: newly cut rough timbers were laid down to occupy a space 20 x 40 across the short way of the tent. Then 2 x 4's with 2 feet centers were laid on these timbers and 1 x 12 boards, lightly nailed, were laid on the 2 x 4's. Then 5 feet lengths of 2 x 4's were nailed vertically around the edges of this floor at intervals of 6 feet. Then, on top of these verticals, horizontal 2 x 4's were nailed all around. If we could find a ridge pole 40 feet long in the timber, we cut that, and if we could not, we used a 2 x 4 and made the frame work of a double pitched roof out of the 2 x 4's, resting the lower ends on a horizontal piece that had been set previously. At intervals of 10 feet we ran 2 x 4's across, nailing these to the rough supports at a height of about 7 feet in order to give strength to the structure. Then we stretched our canvas over this frame-work. It came down to within 3 feet of the floor. We then ran 1 x 12's three feet high, all around, excepting at the door end and there we left a space for the door, making the frame out of 2 x 4's. The door was made out of 1 x 4's, with canvas stretched across. Sometimes we had hinges and sometimes pieces of leather, sometimes we used merely a tent flap for the door.

"No matter what the weather was we framed in a bed of sand on the floor, about 6 feet square and down to the ground, cutting a hole through the floor for the purpose and letting the frame go clear down, and coming above the floor about a foot; and on this sand bed we put a Sibley tent stove with a damper in the pipe and with a spark screen at the top of the stack, which went through the tent roof about a foot to one side from the ridge pole and was held in place by a thimble with a hole cut the right size to pass the pipe through. This spark

screen kept the tent from catching fire and we had no trouble after we acquired experience enough to use it. The three 12-inch pieces around the sides of the tent could not be laid so close together but that there would be a little wind come in occasionally; sometimes we chinked these cracks with moss or when non-absorbent cotton was plenty, we used that, or when we had it we used a yard wide piece of canvas all round.

"All this work was put together so lightly that we could knock the tent down in a few minutes and build it again almost as quickly. We moved the material from camp to camp.

"Once I got some erysipelas in one of my camps and because the hospital had not cost very much money I could afford to walk out of it and set fire to the whole business. The fire left my metal beds and springs so that they could be used again, but thoroughly disinfected them. I kept my medicines and surgical supplies in a small 12 x 6 tent which I usually erected for my own occupancy at these camps. The tent was so located that patients were fed from the main cook tent of the camp. I did my surgical work either in my own tent or walled off a small area approximately 10 feet square, at the back of the main hospital tent, using canvas to wall off the space. An operating table of the simplest possible pattern, the kind usually used as a dressing table and which cost about \$25.00, and a few basins, were about all that I carried with me for operating equipment. Chairs for patients were made by the camp carpenter of the old style canvas seat sort. Sometimes my operating table was chopped out of virgin timber.

"There have been better hospitals than those I had on the White Pass road, but I doubt very much whether there ever was a hospital where patients could get greater comfort and more aseptic care. I used these hospital tents on the extreme summit of the coast range of mountains of Alaska where the wind frequently blew 100 miles an hour, where the snows in the course of the winter accumulated to a depth of 40 feet or more and where it was no infrequent occurrence that the temperature went to 60 below zero. In extreme cases, where my camps were above timber line, wood for the camp was carried on mule back as much as 2000 feet above the timber.

"Your inquirer might be able to find portable houses built by people who are in that business, and that would answer the purpose that he is thinking about, but they

will never answer any better, they will cost more, will be infinitely more trouble to move, and two or three uses of them will put them out of business, whereas the scheme that I have outlined has lasted me a dozen times, for a dozen different camps.

"I should have said that the hospital tent made in the way that I have suggested would have cracks between the boards of the floor. We used to sweep accumulations of dirt and dust into these cracks, and in order that there might be no draft up in the room, we shoveled the dirt all around the edge of the tent until the air was completely shut out of the basement.

"I took care of all sorts of surgical cases, typhoids, pneumonias, post-operative cases of all sorts, in fact everything that came along, and if I were going to maintain a hospital service for a field corps again I should certainly do the same way that I did before."

Doctor Hornsby has certainly covered the ground thoroughly. I am sure his letter will prove of value to many readers of CLINICAL MEDICINE.—ED.]

PITUITRIN IN ECLAMPSIA AND PLACENTA PRÆVIA: GOOD SUGGESTION

I reported in CLINICAL MEDICINE the successful use of pituitrin in a puerperal eclampsia case on November 17, 1913. You scouted the idea that it controlled convulsions. I see, from the article on enclosed clipping, that a German reported its use in February, 1914, for eclampsia.

I also used pituitrin in a case of placenta prævia on March 21, 1915, and with success. I believe the patient would have bled to death without it. I believe that in time it will have a well-earned place in both conditions.

J. S. CARRIGER.

Chelsea, Okla.

[In the clipping enclosed, Schlossberger reports (through the *Deutsche Medizinische Wochenschrift*) two cases of puerperal-eclampsia treated with pituitary extract and pantopon, the latter being a proprietary opium preparation. Apparently the pantopon was given for its sedative action and the pituitary preparation to hasten delivery.—ED.]

STILL MORE ABOUT SORE THROAT

I admit that it is somewhat late to write on throat troubles and their treatment. I do not, in general, disapprove of the treatments recommended in recent numbers of your

valuable journal; still, I think a few remarks on my part may suggest a few additional ideas of value to your readers.

In the first place, I contend that few diseases of the throat are, originally, caused by germ infection. Rather, the cause is to be found in local lesions, such as congestion of some sort and of outer or inner origin, which provide a soil or hotbed for the germs to proliferate in. Wrong eating or other sins against nature may have reduced the resistive power of the blood or lymph circulation. A chill, or what is commonly known as catching cold, whether through insufficient clothing or change of clothing to suit the temperature or state of health, sitting in a cold room, draft, or in wet or sweaty clothes, will do likewise. Carious teeth often cause inflammation of the nerves of these parts, and, so, reduce the resistive power against disease. There will be no follicular tonsillitis, pharyngitis, and the like, when these parts are kept free from becoming diseased.

A healthy throat will resist the germs, or, in other words, will not give hostage to favor development of the germs usually found in such throat troubles. No matter how many diphtheria patients there are in a house, if the throats and noses of the other occupants are healthy they will not contract the disease.

Hence, the first thing to do is, to prevent debilitation of the system, more particularly preventing lesions in the mouth and throat. I could give plenty of illustrations to substantiate these assertions.

Now a few words as to the treatment of acute diseases of the throat. The first instructions should be to take nothing cold into the mouth, much less swallow anything colder than the blood. Why should one refrain from chilly air, and not from chilling the mucous membrane of the mouth and throat? Hot water will do everything, so far as therapeutics is concerned, that cold water will do; and it is sure to do no injury. Hot water will stimulate and will act as a diaphoretic, open the pores and assist the cell action of the body to eliminate waste.

As to elimination and antifebriles, enough has been said. Give continuously laxative salines that cool the blood and carry away waste material.

Now as to diphtheria. If the physician is called in time—that is, when but few, if any, patches have formed—one of the best treatments is, to swab the throat carefully with a solution of peroxide of hydrogen, followed with a 10-percent solution of camphorphenique in liquid petrolatum. This the

attending physician should do. Then prescribe a good antiseptic gargle. Allow no cold water to be taken into the mouth, much less to be drank.

If there is present any adenitis, prescribe a 5- or 10-percent ichthyl solution in glycerin, to be applied externally to the glands of the neck and throat and then covered with flannel. Keep the patient in bed! This course will abort diphtheria, if fully carried out.

These are, in the main, my rules of practice, and I never have a second case of diphtheria in the same house where the subsequent patient is not already infected when I get to the house. And I have never had the misfortune of being called upon to make out a death-certificate naming diphtheria, in any case in which I was the physician from the beginning of the attack—I mean a case in which I was the first physician called.

R. WILLMAN.

St. Joseph, Mo.

[Whatever the doctor's opinions about the cause of diphtheria, he should never delay the administration of antitoxin.—Ed.]

LOBELIA IN VOMITING. A GOOD SPOT FOR THE SUMMER VACATION

We are just relieved from a two-weeks' snow blockade, and I am sending you a few



When the paths are shoveled out.

pictures, to give you an idea of how deep our snow is out here. We have had eleven feet of snow fall so far this winter. In March, though, we shall have what, I think, no other place can show in the way of sports. Around the big hot spring, the snow disappears and the ground dries rapidly. On a warm March day, a person may watch from where he is seated, a ball-game and a ski contest going on at the same time.



We have "some snow" at Pagosa Springs.

If you know of any doctors who like the outdoors and want some new place to go to this summer, just send them to Pagosa Springs, Colorado. They can get here by auto in the latter part of July or in August. This spot cannot be beaten by any place in this country or any other for beautiful and interesting places, while the trout-fishing here is excellent.

Now just a word about three cases I have had, in the past four years, of pernicious vomiting during the latter part of pregnancy. They were all severe; associated with the vomiting there were a coated tongue, constipation and chills. I gave hypodermic injections of Lloyd's lobelia, up to 1-dram doses, twice a day, for about a week, and they all got along nicely and had no more trouble. All three women have good, healthy babies, and labor was normal. I have also

used this lobelia with splendid success in spasmodic asthma and croup.

I am not trying to boost Lloyd's lobelia, but I believe that in it we have a wonderful remedy.

A. J. NOSSAMAN.

Pagosa Springs, Colo.

AS TO THE VEGETABLE FEVER- REMEDIES

The article on the "various vegetable fever remedies," by Doctor Ellingwood, in the February number (p. 113), has suggested to me that perhaps my own study and experience in this direction might be of some help to other practitioners.

Aconite.—Patient robust, full-blooded, active. From some sudden depression of the vital forces, exposure to cold, accident, and so on, an invasion of pyogenic bacteria takes place, accompanied by a hard chill and a high fever—a violent reaction—skin hot and dry, and pulse full, strong, and bounding. This, naturally, causes a hyperemia in various organs, any one or more of which may later develop a true inflammation. This hyperemia may be so great as to cause actual bleeding of the organ involved; also this pressure on the nerve-endings causes, usually, severe pain and restlessness, even amounting at times to such an unbearable condition that the patient believes he is going to die and rolls and tosses around the bed in mental as well as physical agony. This condition usually disappears within twenty-four hours and passes into a stage of actual inflammation, of which bryonia is the remedy-type. Consequently, aconite is seldom useful after twenty-four hours, and, as old people are not of this robust and full-blooded type of individuals, aconite is seldom useful in the aged.

It is interesting to note that the next remedy to be considered has been found as a mineral constituent of aconite, hence, some of the interlocking indications. The dose does not need to be large; 5 drops of a good tincture of aconite in two-thirds glassful of water, a teaspoonful of this every fifteen minutes till effect and then discontinued, being my rule.

Ferrum phosphate.—Debilitated subjects, anemic, relaxed musculature. From the same cause as given under aconite, they have localized congestions, here or there, but local in character. There may be vomiting if this congestion is in the stomach; epistaxis, if of the nose; inflammatory conditions following mechanical injuries, and so forth. Useful

in old age, especially; also, in anemic children. I have often used it with good results in the first stages of acute inflammatory rheumatism of the joints.

Like aconite, ferrum phosphate is not indicated after the stage of inflammation has set in, that is, after twenty-four or thirty-six hours. After this stage, other remedies are indicated.

A few scales of ferrum phosphate are put into two-thirds glassful of water and then frequently and vigorously stirred around till dissolved. Of this, a teaspoonful is administered every fifteen minutes to half hour, according to the urgency of the condition.

Belladonna.—Bilious, lymphatic, plethoric constitutions; persons who are lively and entertaining when well, but violent and often delirious when sick. From the same causes as named under aconite, they come down with a chill and a high fever, with a kind of globular shotlike pulse, throbbing of the carotid arteries, red face, and a pounding headache. If this congestion to the head is not too severe, any noise, jar, motion, light or exertion will make the headache worse; if the congestion is severe, they become drowsy, their pupils are dilated, and they frequently wake from sleep with a startled cry and a fear of imaginary things, but in a minute or two promptly return to their somnolency. The skin is moist or sweaty under the cover, but dry where not covered.

I have used belladonna almost exclusively in the beginning of scarlet-fever of the true Sydenham variety, with excellent results. It is equally efficacious in any disease where the above syndrome is present. Dose: 5 drops of the tincture stirred into a half-glassful of water, and of this one teaspoonful every fifteen minutes to half hour till results; when the disease will usually pass over into a form in which calcium in some form is indicated. The writer prefers calcidin.

Gelsemium.—Children, young people, women, a nervous hysterical temperament. Complete relaxation and prostration of the whole muscular system, oftentimes with entire motor paralysis—at least trembling, weakness, confused muscular coordination—looks and acts of the intoxicated, besotted. Frequently seen in typhoid fever, but may occur in any disease. In those cases of neuralgia sometimes spoken of as cervical, where the pain commences in the cervical region and passes up over the head, or in which the anticipation of any unusual ordeal will cause a diarrhea, I have had good results from gelsemium. In cervical neuralgia, as stated above, I often

resort to the freezing method of Abrams, with the best results. As with all remedies, gelsemium should be exhibited in small doses and repeated to effect.

Veratrum.—Indications as given by Ellingwood are very good, indeed, and I can confirm every one of them.

Bryonia.—Indications as named by Ellingwood are correct, only I would add that all motions aggravate the pains, and that they seldom "stitch," unless there is a movement which rubs the dry and inflamed serous or synovial membranes against each other.

Rhus Tox.—The indications, given by Ellingwood are good, but I would add that the movements are exactly opposite, that is, movement will alleviate the pain of rhus tox. The patient gets "limbered up" by moving about. This is accounted for by the seat of pain being usually in the muscular tissue or tendons, instead of in the synovial membranes.

A. E. COLLYER.

Raton, N. M.

[If Doctor Collyer will substitute aconitine for aconite, atropine for belladonna, gelsemine for gelsemium, bryonin for bryonia, and so on down the line, we shall find ourselves pretty nearly in accord—and he'll be delighted with the results, or I miss my guess. Aside from the convenience of the active-principle granules and tablets, with the absence of the muss and discomfort attending the dispensing of liquids, these other advantages of the alkaloids must be considered:

Accuracy of dosage.

Uniform and unvarying potency.

Permanency—no evaporation of liquids, and slight variation with age resulting from heat, light or humidity.

STYPTICIN A "NARCOTIC" UNDER THE FEDERAL LAW

Here is a problem arising from the enforcement of the federal antinarcotic law.

I was called on the 'phone at night, after the ferry had stopped running, to attend a woman suffering from profuse menorrhagia. It was impossible, under the circumstances, to visit the patient at that hour. Accordingly, I telephoned a druggist in her town to put up the following prescription:

| | |
|------------------------------|------------|
| Stypticin..... | grs. 8 |
| Fl. ext. ergot..... | ozs. 1 1-2 |
| Elixir simp., q. s., ad..... | ozs. 2 |

I told the druggist that I would send the original prescription as soon as possible. However, he absolutely refused to fill this, stating that the Harrison antinarcotic law

prohibited his doing so. I was certainly "up against it," since the patient was slowly bleeding to death. And yet I was powerless! The druggist told me he would not violate the law if everybody died. Please tell me if he had filled the prescription that night would he have violated the law?

J. H. O'NEILL.

Morgan City, La.

[Replying to the Doctor's letter, we at first answered "No" to his question, but on looking into the matter we find that stypticin is a derivative of opium, since chemically it is cotarnine hydrochloride, which is an oxidation product of narcotine—one of the little-used opium alkaloids; technically, therefore, it is an opium derivative and, as it comes under the purview of the law, the druggist was justified in refusing to fill the prescription. And yet, we cannot believe that if he had consented to do so, anyone, not even the most technical-minded official, would have tried to make him trouble.

But isn't it absurd to place a substance like stypticin, which, so far as we know, has never been used as a narcotic and really has no narcotic properties, under the rigid supervision of the federal law? This is another of the absurdities of this exceedingly useful Act. It needs revision to clear up these minor difficulties which are causing so much inconvenience and anxiety to the medical profession.—Ed.]

AN IDEA FOR UTILIZING "CLINICAL MEDICINE"

I have been a reader of your journal for the past year, and I like it very much; and here is an idea in which you may be interested.

For several months I have been in the habit of cutting out the various therapeutic suggestions your various correspondents report having found satisfactory in meeting certain indications. These clippings I index and file away, to be given a trial at some future time. It has occurred to me, however, that perhaps many of the remedies I should never have occasion to use, while some of those tried may prove disappointing; and, then, at the finish, after I have passed a lifetime in weeding out, all that I have thus laboriously learned will die with me. Moreover, I think that what I am doing every physician in active practice also is doing to a greater or less extent.

Now, if all this work were systematized and the collective results put in permanent

form, it would save every individual doctor going over the same ground. So, then, I venture to offer a suggestion; and my idea is this:

Enroll, say, one thousand subscribers, or as many more as are willing, in a joint work of investigation, to try out rational and definite suggestions, each of which is to meet a given indication. Let them report results to a central head who has the direction of the work. In this way, after a year or two, a great deal of ground can thus be covered. The information thus gained should be put in book form, then each of the collaborating physicians should receive a copy in case he has contributed to the results; otherwise, he ought gladly to buy the information the book may contain.

To put the idea in a concrete form: Recently I have been trying calcium sulphide in a case of dry tubercular pleurisy. It appears to me to have done good. Now, if at the request of CLINICAL MEDICINE a thousand clinicians put this drug to the test in their cases of tubercular pleurisy, as well as in tuberculous conditions generally, when eventually we have all the reports of these thousand men in, I shall come pretty near knowing whether in these conditions calcium sulphide actually is as good as it now seems to me to be. Then, should that particular drug prove helpful in such cases, that item, incorporated in a book accessible to everybody, will be worth something, backed, as it will be, by the findings of a thousand men scattered all over the country.

What do you think of the idea?

Pittsburgh, Pa.

II. P. KOHBERGER.

[We like your suggestion, doctor, probably because we have been talking something of the kind ourselves for many years. Such a collection of useful remedies should prove of the utmost value to every physician in the country. We will do all we can to "boost." To get things started, we invite every reader to submit a remedy, a suggestion, or a criticism. We will give all the space necessary for the presentation of the ideas of our readers, and we'll consider the book. Now what do the family say? Are you game? What will you do?—ED.]

THE CORTEX

Enlivening thought plays through this crown of gray

As lightning through gray matter of the skies;
For this the cortex doth the life o'erlay—
An iridescent crown doth it comprise.

This is the earth crown mortals here may wear,
Enriched by reason, wit, and wisdom grave;
The soul's fond seat beyond the world's compare,
Entombed, beautiful, in vision's cave.

Here billowed on the cortex's swelling wave
Ambition lifts up with the welling tide;
Here nimble thoughts their fleeting feet well lave
And skip the landscape as with lambkin pride.

Here passion's storm doth concentrate with power
And flings its shafts down to the earth beneath;
Here peals of anger flash their fiery shower,
And sense and judgment cause its wrath to sheathe.

Ideas flash and glint as morning dew,
Wit sparkles as the sheen of silver spray,
Memory's pictures rise before our view,
While reason surges on her glorious way.

Love as the sweet perfume of flower in vase
Fills every cranny and each dipping fold,
Luxuriant as clinging vines may trace
Historic walls enriched by visions old.

And friendship, so akin, distills adown
Her fragrant sweets, the lips of joy may sip;
Gives fellowship which brings to man renown
And frames his name familiar on the lip.

Thus friends mingle as in some spacious hall;
The smile of face greets smile and dimpled cheek;
No living actor is beyond the call
Of this indweller whom the world may seek.

The buried past here rises into view,
The armies dead trample again the sod;
Tongues silent long orations here renew
While men and angels do the will of God.

Oh, man, what beauties rise to gild the sky,
What diadems bedeck thy noble brow,
What splendors fill thy mansion, none on high
Excels the glory into which you grow!

JAS. A. DEMOSS.

Thayer, Kans.

PIXLEY AND PELLAGRA

Shortly after the publication of Goldberger's remarkable paper, in which he attempted to show that pellagra is due fundamentally to protein starvation (CLINICAL MEDICINE, Dec., 1915, p. 1129), we received a letter from our old friend Dr. Charles S. Pixley, formerly of South Carolina, but now of California, in which he called attention to the fact that he had advanced this theory in a paper published in CLINICAL MEDICINE in June, 1913.

We veritably believe that Doctor Pixley is entitled to priority for this discovery. In the paper referred to, he unqualifiedly charges protein starvation with being the fundamental reason for the prevalence of pellagra in the South—and he gives a very interesting hypothesis to explain this belief. He says: "My course with all pellagra-patients is, to

try to reestablish hepatic and pancreatic function by means of protein in such amount as these inefficiently acting organs will bear, increasing the amount weekly." Under this treatment, he declares, "the rapidity with which the patient recovers is gratifying"; and he also says, "There is no drug-cure for pellagra, but it is the most easily cured disease of which I know." To back up this statement, he reports the treatment of 1100 pellagrins, of whom, so far as he was able to discover, only 5 had succumbed.

Look up Doctor Pixley's paper. It was, and is, interesting. We are strongly inclined to claim for him and for CLINICAL MEDICINE priority in presenting the starvation theory as a cause and the high-protein diet as a cure for pellagra.

Hysterical Retention of Urine

I was called at night to see a woman, 30 years of age, who gave the history of not being able to pass her urine for over twenty-four hours. The bladder was quite full and the lower abdomen bulged out with it. I knew that I should avoid passing a catheter in these cases if possible, and, as I had to go to my office to get a catheter, I tried hot packs over the vulva and hypogastrium; these failing, I tried "moral suasion"—had her get up and try to urinate, as she was quite healthy, and temperature and pulse were normal.

I knew if I went home to bed I would be yanked out later, so I decided, at last, to get that catheter at the office. Returning, I went at it, and with the husband holding a lamp, would you believe it, I couldn't hit the meatus! However, my catheter slipped into the vagina and a stream of urine shot out of the meatus urethrae *an inch anterior to where I had the catheter in the vagina*. I had the woman on a bedpan and when she was through there was a half gallon of urine in the vessel.

When I was washing up, at the kitchen sink, the husband said: "Doc, did you get that instrument into the bladder?"

"No," I said, "I slipped it into the vagina purposely, and made her believe it was in the bladder."

Of course one swallow does not make a summer, but I shall certainly try putting the catheter into the vagina again if I ever have another case of hysterical urine retention. Some good discoveries have been made by

blundering, and this may be a useful procedure in these cases.

Tripp, So. Dak.

EMETINE HYDROCHLORIDE IN HEMATEMESIS

On January 23, 1916, in the afternoon, I was called to see a woman about 28 years of age, mother of two children. She and her husband were doing some work in a grocery store, when she was suddenly taken with a fainting spell. She was removed to her home, only a short distance away, and I was called. When I arrived at the house she had vomited and fainted away. The vomitus consisted of the fibrous part of an orange (the parts which encompass each section together with the tough center) and with it was blood mixed with other contents of the stomach. The vomited matter was in the toilet in the bath room and I could not estimate the amount of blood.

I administered, at once, a hypodermic of morphine, 1-4-grain, atropine, 1-150-grain, with strychnine nitrate, 1-40-grain. She revived and soon felt quite well.

On Monday there was no trouble, but Tuesday morning I was called early. She had vomited a quantity of blood and fainted. I found her very pale and almost, if not quite, pulseless. The blood was in a quart can and almost filled it. Some of it, perhaps, was water, although we were not allowing anything to be taken by the stomach.

I now injected emetine hydrochloride into the thigh, and in the evening gave a second injection of this alkaloid. The woman passed a good day Wednesday, but Thursday she fainted again. I was called and responded at once. A few minutes after I reached her bedside she had an action of bowels, the stool being nothing but a mass of foul-smelling clotted blood. I immediately injected emetine hydrochloride. In half an hour she threw up about four ounces of the same kind of blood from the stomach. After this no more bleeding occurred; however, I wanted to be sure the hemorrhage would not recur, so used the emetine again in the evening. No bleeding the next day, but I used the emetine in the evening; also, the next day, Saturday, another final dose of the alkaloid. This was on January 29.

All this time I was keeping her quiet. Had ice-bag over stomach for two days, securing rest at night by means of hypoder-

mics of morphine. We could not utilize the stomach for food, so gave nutrient enemata.

February 7, the nurse endeavored to raise her head enough to give liquid food, but she became faint, and extremities cold. They had to wait half an hour before she could take the nourishment.

She had at one time considerable elevation of temperature, was pale as a corpse; finger nails white, and she became jaundiced. I gave calomel followed by a solution of magnesium citrate. Put her on triple arsenates with nuclein, pepto-mangan (Gude), and plenty of tablets of nuclein. February 26, one month from first call, she was lifted into an easy chair. She cannot stand up yet because her "knees are too shaky," as she puts it. We are well pleased that she is recovering so nicely.

A. I. MITCHELL

Seattle, Washington.

[In the February number of CLINICAL MEDICINE (p. 171), we printed an article by Doctor Mitchell, reporting his experience with emetine, which he used to check a terrific epistaxis occurring in his wife. The loss of blood was so great that the doctor was greatly perturbed and fearful as to the result, and naturally very thankful that he happened to have a small supply of emetine hydrochloride ready for this emergency.

In the letter accompanying the article which we are printing herewith the doctor says: "I do not send the enclosed case-history with the expectation that you will give it space, but rather to show that while 'one swallow does not make a summer,' two will come much nearer doing so. The more frequent the occasions on which a remedy scores, the greater our confidence in its virtue. Also, it shows how providential it was that I, who a short time ago first came to know through CLINICAL MEDICINE of this application of emetine hydrochloride, and who had secured a tube of tablets for use in pyorrhea, should so soon find it, as I fully believe, the means of saving my own wife's life, and then, through the same means, be able to handle successfully the case described in the paper which I am enclosing."—ED.]

DOCTOR LYDSTON COMMENTS

I note in your last issue a statement regarding the status of my proceedings against the trustees of the American Medical Association relative to their legal standing as officials. This statement is in the main cor-

rect. I wish to point out, however, that the Supreme Court refused to grant a writ of *cetiorari* because the Appellate Court's decision was good law. This decision was: first, that the American Medical Association must hold its elections in the state of Illinois; second, that every member should have a ballot; third, that because of these facts the State's Attorney must serve *quo warranto* writs upon the trustees.

There will be no further trial of the case. The writs will be served *pro forma*. The trustees will be required to answer. They will be unable to answer because the merits of the case already have been decided. Writs of ouster will be asked for, and a new election be ordered for trustees. It would appear that the American Medical Association is so much "interested" in the results of my suit that technicalities at present writing cut no figure, save in the matter of formal legal delays. Sophisticated delays, quibbles, evasion and deceit will avail as little for the defense as they will annoy me. The fate of the association henceforth is in the hands of the members, where it properly belongs. It is for them to make proper use of their power.

As for myself, my political activities in the American Medical Association have at last ended in the accomplishment of more than I ever dreamed of when I first began my battle for membership rights. I have no political ambitions, and my only hope is that the membership will use and never abuse the ballot, nor permit a self-constituted oligarchy to dominate the association without check or hindrance or regard for the rights of the rank or file.

G. FRANK LYDSTON,

Chicago, Ill.

FOR THE REMOVAL OF GUNPOWDER STAINS

Some years ago I was called to see a small white boy who had filled an ink bottle with gunpowder, put a coal of fire on it, and blew it to see it "shoot." The result was that the bottle exploded, and the youngster was fearfully burned with the powder on the face and neck.

I tried washing the burn with different things, but with no success. Then I tried opening the places in the skin where the grains of powder had entered and endeavored to pick them out, but the stains remained almost as bad as before. I was just about ready to give up, when an old negro woman, a nurse in the family, said she could get all

the powder out before the next day. I told her that it was up to her, and she went off toward the pantry. (I followed, because I wanted to know what she was going to do.) She then told me she was going to get some Irish potatoes, wash them thoroughly, grate them on an ordinary potato grater, and apply the gratings directly to the part burned, applying a cloth covering and allowing the dressing to remain about eighteen hours. Then, if any place had not been reached by the grated potato, it would be reapplied.

I have used this simple remedy frequently and have never had to use the second application, for if it is pressed down on the part well, it will positively remove every particle of the gunpowder as well as the stain in the flesh. The dressing should be about the thickness of an ordinary poultice, and if the patient is burned in the face, see that the potato-pulp is applied with care around the eyelids, since they are usually badly burned.

Several years ago, while at one of our southern resorts, I called at the office of a doctor friend, on July 5, and found him with a patient on the table, the nurse busy handing him different instruments with which he was trying to pick the particles of powder from the face of a little white boy who had celebrated "the glorious 4th" with a toy cannon. It was very warm, and the doctor had beads of sweat pouring down his face. When he asked me if I had ever had the misfortune to get such a case, I told him yes, that I had no trouble at all with them, and that if he would allow me to suggest a treatment, I was satisfied that his patient would be all right the next day. He was glad to hear my suggestion, but when I told him what the remedy was, he grew doubtful at once and questioned its virtue. However, he promised to try it; and it was finally agreed that if it failed I was to pay for the dinner next day at the hotel. Next day, about 6 o'clock, we visited the case. The boy had taken off the potato poultice at 4 o'clock (when we failed to come, as agreed) and was out in the front yard, playing baseball with other boys, and none the worse for the injury except that his face was slightly swollen. The doctor saw him playing and said, "The dinner is on me."

W. W. MATTHEWS.

Glynn, La.

WHOOPING-COUGH—A COMMENT

In treating whooping-cough, it has been my custom for many years to direct that the

illuminating-gas from one unlighted burner be turned on in a room until the odor of the gas is strongly perceptible, after which the patient is carried in and allowed to breathe this gas-laden air for half an hour or even longer. This procedure may be repeated whenever the paroxysms of coughing or dyspnea arise. I hardly need mention the well-known fact that children raised near a gas-plant are remarkably free from whooping cough.

The gas is directly germicidal to the microorganism producing pertussis. I have repeatedly resorted to this procedure when called to cases given up by other physicians and had the satisfaction of seeing my patients improve from the very start.

I have mentioned this treatment to many physicians, at different times, always saying that I instruct parents and nurses to try this method whenever they had whooping-cough to deal with, but, strange to relate, in every instance I have been criticized for it, not one approving word have I ever heard. "What do you do that for?", they will ask. "What do you get out of this?" "You are hurting the business." "You are a —— fool!"

I cannot believe, of course, that all doctors feel that way. If so, however, they would remind one of the old Spanish doctor who said: "It were better that all the men in Valladolid should die than that my pet theory of practice be discredited."

To me, the relief of suffering, the saving, even, of one precious life, is worth more than all the money you could pile up.

To help, is our mission.

Write this message abroad across the heavens,
Extend it mile upon mile.

'Tis man's humanity to man
That makes the millions smile.

C. S. COPE.

Detroit, Mich.

[The treatment advised by Doctor Cope should be used with caution, remembering that illuminating gas ("water gas" commonly used) consists largely of carbon monoxide, which is a deadly poison, destroying the red blood cells. There is no antidote. Too much of the gas at a dose, or too many doses, may have a disastrous effect. Therefore "handle with care."

After all, why not calcium sulphide? Is there a remedy that acts more nicely than this in the average case of pertussis? If you are prejudiced against it, you might try silver iodide, a remedy that has been warmly praised by many competent practitioners. Likewise, emetine has recently been employed

in whooping-cough by Milwaukee physicians, and with really wonderful results so we are informed. But calcium sulphide is my stand-by; it is safe as well as efficient.
—F.D.]

THE PROCTOLOGIST AND GASTRO-ENTEROLOGIST

Dr. Rollin H. Barnes writes us that *The American Journal of Gastro-Enterology* has combined with *The Proctologist* and will be published (beginning with the March number, first of year) as *The Proctologist and Gastroenterologist*, from St. Louis. Dr. Lewis Brinton, Philadelphia, and Dr. Anthony Bassler, New York, will have editorial charge of Gastroenterology; Dr. A. L. Benedict, editor of Dietetics; while Dr. Rollin H. Barnes, St. Louis, will be managing editor and publisher.

A FEW COMMENTS ON PAPERS IN CLINICAL MEDICINE

One of your subscribers in Ohio, in criticizing Doctor Jones on his electrical treatment, says that our critics really are our best friends. I agree with him, and, in fact, I was on the point of saying the same thing, inasmuch as Doctor Jones was pressing down so heavily on some of us who had used electricity for quite a while, and with rather unsatisfactory results. He says, we get a little family-machine, and then think we have all the electricity there is. I thought I had a very fine plate in a neat case, and used the galvanic and faradic forms in all of their variations—and it seems that these are all that Doctor Jones has used with any degree of success. He did speak of the static "breeze." We use sea-breezes instead, which are excellent.

There are cases which galvanism will benefit, if the current is strong enough to change an old ulcer to an actual burn. But you can shake the life out of a man who has malaria, and he will still have a chill from which there is no reaction either as to fever or even animal-heat. But the doctor failed to tell us how much faradic current he used. While he used the interrupted current, he never interrupted his remarks with an explanation. He used the galvanic current, but failed to say how many milliamperes were used in any case. I suppose he used it as alkaloids are used, to "dose enough;" but some patients will complain if you use only seven milliamperes, while others can stand forty or more.

I also have a little kick on the doctor from Ohio. He thinks we have twice too many doctors. I also think so, and I have fallen on a plan to regulate this. Now, doctor, let's each of us decide to discourage some young fellow who is just starting out, and get him to quit the race. By these means, we can knock out half of the competition; and this will be easy work if we can catch the youngster when he gets a patient from one of our best families and expects to show just what he can do, and this patient, by chance, happens to die. Just go to that young chap and tell him that that is the way the whole darned thing will go all through life; that he will be called out on the dampest, coldest, meanest nights and will then have to cut and shoot to get pay for it, and then, after he has treated all classes of patients for years, including lawyers, doctors, judges, railroad officials, and all the best people of the country, some little black pug-nosed negro will decide that he doesn't know anything, turn him off and get another doctor to treat his wife. That upstart will then throw down his medicine case and quit the field. But be sure you do this on his first case, for, if you wait, he will get so he doesn't give a darn who dies.

As to surgery, that is progressing nicely. Everybody and his brother is having his appendix removed, because the carpenter who made it did not know it was useless and always rotted off if left long enough. We had been neglecting this important organ, because we thought the builder knew what was needed; yet, while in our little thirty-five years work we can't recall even half a dozen patients who died from this, that or t'other bowel obstruction, in nearly every paper we pick up we see where someone has died from "shock" or something else after a successful (?) operation for the removal of the useless (?) appendix. I say, while all this is true, yet we have lost thousands of dollars by neglecting this very important point.

Another trouble, which I already have mentioned in other papers, is the treatment of fractures. We used to place the bone parts, that were broken, in apposition and bind them up with splints, then let them remain for six weeks in this position. Now, although the result was nearly always a proper union, just think what might have been and the great amount of money we have lost by not making a compound fracture of the simple ones, thereby producing blood poisoning, and by this foolish oversight losing much good practice in curing it. Also, by our negligence we have, no doubt, caused many poor under-

takers to miss many a profitable job. True, we did not then know so much about the new antiseptics, but used such common stuff as carbolic acid, bichloride of mercury, iodine, and such-like old-fogy makeshifts; thinking that, by mixing too many articles together—as in listerine, which contains a lot and then some—one might destroy the efficacy of the others, we just took ours straight. Surgery is all right and we are glad to see it advancing. Also, as we know, there is a lot more money in it.

We also gave quinine in malaria, without fear of the dire results we hear of now. We did not get any bad effects, but we did knock the ague out, instead of allowing the disease to run a long-continued course. Another example of our ignorance as to how to make easy money.

Verily, when the old family doctor passes, then, and not till then, will the medical profession begin to make money. One will trim the patient's nails and another his corns; one look after his rectum, others at his appendix, his gall-bladder, his stomach, his skin, bladder, prostate gland, urethra, brain, heart, throat, lungs, eyes, ears, liver, spleen pancreas and so along the anatomical index. Then the anesthetist, obstetrician, gynecologist, the general surgeon, diagnostician, and nerve-specialist will each get his chance—and, by the way, let us hope and pray that the latter will remove as much of the nerves as possible, so as to cut short a lot of these long-drawn-out papers.

We have not mentioned the intestinal tract, but Doctor Abbott, with his saline laxative and intestinal antiseptics will attend to that all right. But right here let me say that, while I like Doctor Gray's papers very much and have gained lots of information from them, I certainly think he uses too much podophyllin and calomel, or used to, at least. However, I see he uses smaller doses of late.

As I have before stated—and we all know—the human system is nothing but a fine machine. The stomach is the firebox, where we place all the fuel. The bowels are the ash box. The kidneys are the condensers. The heart is the pump, which distributes the fluid for making steam. The brain is a powerful governor that regulates the running of the whole machine. But the liver is only the lubricator that furnishes the wherewithal to make the machine run smoothly and nicely, if kept in good condition. Now, would it be good common sense for the engineer, when he finds his machine all clogged and closed up

(as in constipation), to flood the whole works with lubricant (or bile)? Or, would it not be better first to clean out the machinery (you see where Brother Abbott comes in) with saline laxative or something on that order? Then only the normal amount of lubricant would be required. Consequently, only small, stimulating (not heavy purgative) doses of the laxative are required. Besides, when a patient is sick, his liver is also sick, and we should no more try to make the liver do three or four days' work in one day, than we would require a man to do the same.

Mercury can be used for several purposes: as a tonic, as a stimulant, as an irritant, and as a sedative. As a tonic, I prefer to use the bichloride, protoiodide, and similar salts, in small doses. As a stimulant, I give 1-10 to 1 grain of calomel, repeated hourly to effect. As an irritant (which I seldom use) 3 grains of calomel every three hours until 9 to 15 grains have been taken. As a sedative, 10 to 20 grains at a dose.

Who has not had trouble getting the bowels to act at all, even after large doses? And who has not seen the bowels checked for two or three days after large doses of calomel have been taken? The liver must rest, as a man would be forced to do.

For health, want of practice, and other reasons, I have been forced to work in several sections of the country, from the Kentucky line to the Gulf of Mexico. Several years of this time was spent in the worst part of the Mississippi delta, right on the Gulf Coast, not so far north from Doctor Gray's place of work. I am now in the rich prairie section of Mississippi, eastern part of state—so, have gone up one side and down the other of a section a hundred miles long. Therefore, if I should claim to have treated several cases of malaria of every form, you may not be surprised. And one thing I have learned is, that the liver is the liver, north or south, and it must be treated with respect almost the same everywhere, or it will not do its work properly.

Just a few words more. The doctor in Ohio thinks as I do, that we should tell what we know, so as to give others information. I agree with him fully, and I will say first, for his information, that in my rounds I have naturally run up against more than one medical board, and if he has not done the same it is rougher sailing than he may think. So, then, he won't kick on me on this line.

Now, for what I really know—and it is no guesswork. I know that, when I treated malarial bloody urine with quinine, I had less

trouble than I did without it. I know that at one time another doctor and I each had a patient in the same house. They were brothers, taken with this trouble at the same time. We decided that, if quinine was dangerous, we would not use it. But, as both had become unconscious, one doctor decided to slip in a little quinine, and he gave his patient 4 grains every two hours—30 to 40 grains. This patient recovered, but the other—who received none—died. I know that I treated a case that began with the bloody urine for seven weeks—being a continued form. I gave this 14-year-old girl 30 grains of quinine the first day; and repeated it the next day. The urine cleared up, but on the first of each week the blood returned as bad as before. Each time I gave quinine, it cleared up. After the seventh week, she began to improve, and thereafter had no more trouble. If quinine causes the trouble, why should it clear up after giving it? Or, why should it wait just seven days before returning?

These are only two instances. There were many others. Now, I assert that I never lost a thoroughly cinchonized patient from this trouble. I also know that I have seen several who died for want of quinine, while I don't know that I ever saw one die from its use. I also know that quinine is good in almost every kind of fever. Even in typhoid fever, in which enough is given to keep the skin moist, I do not fear it.

I make these remarks, because called for in the January issue.

There are also a few other things that I positively know. Pure beechwood-creosote is the best cough-medicine I have ever used, given in half-drop doses in good thick sugar syrup or syrup of tolu, say, 32 drops; syrup of tolu, 8 ounces. Dose: 1 teaspoonful every three hours, and just a little at each coughing—"spell." This in connection with fresh air, plenty of light, and nourishing food; if any medicine will cure consumption, this will do it. Don't say no—just try it and report. It will also cure specific urethritis alone. Don't try to stop the discharge, for, when a dog is running from you, he can't hurt you very badly. Just continue the medicine and report results.

I also know that 30 drops of pure carbolic acid with 2 ounces of potassium chlorate in 8 ounces of water has cured 90 per cent of all kinds of sore throat; with me nothing else. Try it. [Teaspoonful doses, Doctor?—Ed.]

Now I am glad to close, but, before doing so, I want to say that the druggists are trying

hard to have laws passed preventing physicians from prescribing and filling their own prescriptions. Patients would frequently have to go from five to twenty miles to get medicine, no matter how bad the case. I think it is the most ungrateful and most foolish proposition I ever heard of. If a physician has sense enough to write out what he wants, and the amounts, he certainly could put them in a bottle or box. If he can tell the druggist what directions to write, he certainly can write them himself.

I would be delighted to have a good, honest druggist to fill my prescriptions. But all I have seen (and they filled all of them for several years) will not only refill without orders, but will actually prescribe their own medicines for my patients. I think I have the plan to regulate this, and shall propose it, if this goes through, perhaps in my next letter.

"A FRIEND."

Mississippi.

[We are thankful to the doctor for assigning the alimentary canal to us. With that portion of the human anatomy to look after we can get along very nicely, thank you!

With calomel prices climbing up and up, we are convinced that many more physicians, even our good friends down in the Mississippi bottoms, will soon be converted to "small doses frequently repeated." It is wonderful what splendid results can be obtained with minute quantities when the mercurial is used carefully and followed with the laxative saline. However, the time is an opportune one to begin the study of other cathartic drugs. For instance, why not use podophyllin? Eclectics call it the "vegetable calomel," and it is a splendid stimulant of liver-action—without being over-stimulant.

When our southern brethren get thoroughly saturated with our ideas regarding intestinal antisepsis, they will not need to saturate their patients with quinine quite as often. The latter is a great remedy, an indispensable one in malaria, but the man who looks after the condition of the *prima via* very carefully, finds that he can get along with less of it than he has heretofore been accustomed to use—and that's another saving. And speaking of intestinal antisepsis, I suspect that the high prices of drugs will serve to interest more of the profession in the Bulgarian bacillus tablets.

The doctor's criticisms are all right. I hope he will follow with another paper, giving us some more of his therapeutic "kinks" as well as his solution of the prescription problem, as promised.—Ed.]

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

WHEN one is confined to the house with the grip, as I have been for the past two weeks, one is likely to get into a reminiscent frame of mind, and, I might add, a critical frame of mind, also.

I do not feel exactly like writing a medical article today. Instead, I will relate a few experiences that I have had since I began to practice medicine, that will show a side of human nature that is altogether too common.

When I was medical superintendent of a well-known sanatorium, some fifteen years ago, before the Harrison law went into effect, I had as a patient a lady whom I suspected of being a cocaine- or some other drug-fiend. She denied that she was addicted to any drug. However, not convinced, I assigned her a special nurse, put her in different clothes, and placed her in another room, one that contained none of her clothes or baggage.

On the third day, following this change, a box about the size of a seidlitz-powder box, done up in blue druggist's wrapping-paper and containing powders of white color came to her by mail from Chicago. In the presence of the lady's husband, I opened the box and then had the powders analyzed in our laboratory. The chemist found them to be cocaine hydrochloride. Accompanied by the husband, I took the box of cocaine powders to the lady's room and accused her of taking this drug. She saw it was useless to deny the fact any longer, but flew into a rage and began to abuse her husband as well as me shamefully, declaring that she would take cocaine as long as she lived, in spite of us.

I told her that she would take no more cocaine while she remained at the sanatorium, and, furthermore, that, with her husband's consent, she would remain at the sanatorium in charge of a special nurse until she was cured. The woman recovered completely, has not relapsed, and is today one of the most grateful and appreciative ex-patients.

The nub of this story is this. Desiring to know, if possible, who had sent that

cocaine, I set my "Doctor Furnivall" and "Sherlock Holmes" mind to work, and eventually located the Chicago druggist who sold the drug to this woman. The druggist admitted that he had sent her cocaine to New York, San Francisco, and to many other cities in the United States. He also admitted knowing that she was being treated by me, and probably for the cocaine-habit. When I asked him why he sent cocaine to a woman whom he knew to be under treatment for this pernicious habit, he shrugged his shoulders and said, "Oh, well, if I hadn't sold it to her, she would have bought it somewhere else; and I might as well have the money as the other fellow."

I said: "Then your interest in this case is merely in the little profit you make on the cocaine; you have no consideration for the poor victim nor for her family—you think only of the little money you make out of it?"

"Well, that's about the size of it," he said; "some other druggist would get the money if I didn't."

In the town where the sanatorium is located, there were three drugstores, and whenever I had a patient badly addicted to the use of alcohol, morphine, cocaine, chloral or other drug I would notify each druggist not to sell anyone of these drugs, respectively, to the particular patient under treatment. But my request was never heeded, so far as I know. In several instances, I was positive that my patient secured his drug at one or other of the drugstores in the town, and when I took the matter up with the proprietor I would receive a reply similar to that given me by the Chicago druggist—"If I didn't sell it the other fellow would."

Many times I have had physicians furnish drugs to my patients, well knowing that they were under treatment, and that just for the paltry dollar or so they would make. The Harrison law has done some good, but, unfortunately, it hasn't changed human nature much.

Not long ago, I had a patient under treatment for neuritis, who was also addicted to

morphine. I got her off the morphine, relieved her neuritis, and altogether she was doing very well, save that she was nervous and irritable—as was bound to be the case under the circumstances—and suffered considerably from sleeplessness; however, her neuritis was steadily growing less. One day the woman received a box from a big department store in Chicago. From something she said, I became suspicious that this box contained narcotic or hypnotic drug. I opened the box, and found in it two pint-bottles of somnos! Now, somnos doesn't come under the Harrison law, but no one can convince me that it is right or just to place on public sale a drug like somnos. I suppose anyone could buy bromidia by the pound in a department store too.

I maintain it is wrong in principle to have such drugs on sale where anyone can purchase them without restriction. Why are they on sale? Simply to make money for the manufacturers. The welfare of the consumer is of no importance to the manufacturer, what he wants is, the *money*. If his product is a habit-forming preparation, all the better for him, so long as he can keep out of the penitentiary.

The whisky traffic is another example of this greed for money. It is immaterial to the whisky manufacturer and the vender how much suffering, crime, and poverty result from the sale of the stuff. The only question with them is, how much money they can make out of their business.

Just now this country is witnessing a most shameful exhibition of greed on the part of certain manufacturers furnishing munitions of war to European nations engaged in murdering each other. I boldly affirm that, morally, a man who will furnish powder and shells and other agents of destruction whether to one person or to a nation as a whole, for the purpose of killing other human beings, is as guilty of murder as if he himself did the killing. And for what are we in this murderous trade? Money! These manufacturers of munitions of war hope deep down in their hearts, that this frightsome war will continue for years longer, so that they can pile up more money. And our government stands for this gruesome business! While a few humanely thinking people are trying to get some food to the starving Poles, England and Germany, between them keep them from getting it. And we, the people of the United States, stand for it, all the while allowing a few

conscienceless manufacturers to prolong the slaughtering by furnishing material with which to blow human beings to pieces. And all this shameful, outrageous business, and the war itself, is prompted and carried on because of avarice and greed. There is no justification whatsoever for it.

Europe will suffer for generations for this, and so will we. A nation can not last as a money-making mob; it can not concentrate its soul upon money or territory alone, and prosper. No man, no nation actuated by greed is great. Ruskin, over fifty years ago, saw England's weakness, in fact that of all Europe, and in a public lecture delivered in Manchester on December 6, 1864, expressed himself as follows:

"A great nation does not spend its entire national wits for a couple of months in weighing evidence of a single ruffian's having done a single murder, and for a couple of years see its own children murder each other by their thousands and tens of thousands a day, considering only what the effect is likely to be on the price of cotton, and caring nowise to determine which side of battle is in the wrong. . . . And large landed estates bought by men who have made their money by going with armed steamers up and down the China Seas, selling opium at the cannon's mouth, and altering, for the benefit of the foreign nation, the common highwayman's demand of "*your money or your life*," into that of "*your money and your life*." . . . A great nation does not mock Heaven and its Powers by pretending belief in a revelation which asserts the love of money to be the root of *all* evil, and declaring at the same time that it is actuated, and intends to be actuated, in all chief national deeds and measures by no other love."

"It is one very awful form of the operation of wealth in Europe that it is entirely capitalists' wealth that supports unjust wars. Just wars do not need so much money to support them, for, most of the men who wage such, wage them gratis; but, for an unjust war, men's bodies and souls have both to be bought, and the best tools of war for them besides, which makes such war costly to the maximum: not to speak of the cost of base fear and angry suspicion between nations which have not grace nor honesty enough in all their multitudes to buy an hour's peace of mind with; as, at present, France and England, purchasing of each other ten-millions' sterling worth of consternation annually (a remarkably light

crop, half thorns and half aspen-leaves, sown, reaped, and granaried, by the 'science' of the modern political economist, teaching covetousness instead of truth). And, all unjust war being supportable, if not by pillage of the enemy, only by loans from capitalists, these loans are repaid by subsequent taxation of the people, who appear to have no will in the matter, the capitalists' will being the primary root of the war. But, its real root is the covetousness of the whole nation, rendering it incapable of faith, frankness or justice, and bringing about, therefore, in due time, his own separate loss and punishment to each person.

"France and England literally buy panic of each other; they pay, each of them, for ten thousand thousand pounds' worth of terror a year. Now suppose, instead of buying these ten-millions' worth of panic annually, they made up their minds to be at peace with each other and buy ten-millions' worth of knowledge annually; and that each nation spent its ten thousand pounds a year in founding royal libraries, royal art-galleries, royal museums, royal gardens, and places of rest. Might it not be better, somewhat, for both French and English?"

True, it would, Mr. Ruskin, but human nature hasn't changed any since you wrote those words fifty years ago. Indeed, you might think, were you alive today and witnessed the present war, that mankind is today less civilized than when your countrymen were trying to conquer France, as they are now endeavoring to wipe Germany off the map. And now, as then, actuated principally by greed.

You, my reader, may think I am a pacifist. Yes, I am, but you can bet I am for preparedness to the limit, because we are surrounded by nations made up of human beings that are as greedy and bloodthirsty as tigers. And, until human nature is different from what it is, and has been since the beginning of time, the individual as well as the nation must be prepared to protect himself and itself from attack.

I hold that what the community today most lacks is, the individual instance of virtue of the man of whom the world may say, with Shakespeare: "This is a man"—a noble, virile type, the living exemplar of that high conscience, that stainless sense of honor and incorruptible love of truth which alone proclaims the Creator's image.

The inclination to temporize, to make truce

with private convictions lures us from a clearer insight into the true relation of individual action to the general weal. Among certain classes, there is an actual fear of opprobrium attached to overscrupulousness in daily conduct. Not to "succeed" is almost regarded as a reproach, and it is not uncommon, even, to hear cases of successful embezzlement, for example, admiringly spoken of as "smart." Nor is this encomium confined to the ignorant and unprincipled; men of intelligence and standing in the community are all too ready to condone a moral obliquity in others which they would vehemently disclaim for themselves.

In every walk of life, we need men of staunch courage, God-fearing (or, better, God-loving) men, of strong personality, to stem the tide of shuffling weakness and to give honesty and tone to politics, trade, and society.

Everyone is familiar with Mathew Arnold's phrase of "the Power that makes for righteousness." This is the power which makes for progress. There is no abstract righteousness; but righteousness is that which conserves and lifts and gives light. Unrighteousness is that which hurts and kills individuals, cities, nations. Greed and falsehood disintegrate and break down the tissues of society. Truth binds men together and reinforces the social texture. Honesty builds up, but dishonesty subtracts; therefore, the dishonest can not endure. Cruelty destroys, kindness saves. Impurity is a poison sapping life, but pure hearts and pure homes create new vigor.

Every effort of righteousness is a movement of progress. Unrighteousness is a form of suicide. The eternal forces wage war to undermine and bring to death the things and the men who bring no positive contribution toward the momentum of civilization. Such, then, is the inexorable rule of existence; beneficent, too, since it makes death a gateway to higher life and gives every creature a new value. The truth is, the world is full of dissatisfaction with every present-day standard of progress. There is no civilized nation on earth. There is no modern city of God, yet. There is no organized form of religion, good enough as it is. Our satirists of today castigate the whole race of man much as in the days of Juvenal. The prophets of Israel still speak their rebukes to us. The cry is for some higher types of man, some aristocrats or "supermen" fit to create a nobler society.

Among the Books

FALTA: "DUCTLESS-GLAND DISEASES"

The Ductless Glandular Diseases. By Wilhelm Falta, M. D., Vienna. Translated and Edited by Milton K. Meyers, M. D.; with a Foreword by Archibald E. Garrod, M. D. With 101 illustrations. Philadelphia: P. Blakiston's Son & Co. 1915. Price \$7.00.

The translator and editor has furnished us not merely a faithful rendering of the German text of this important book, but also a rounding-out of the subject, by the consideration of recent American and English views on the subject. To this end, he has consulted a wealth of material, comprising hundreds of references and numerous original articles. The American and English views referred to are put into the form of an addendum at the end of each chapter, so as not to interfere with the continuity of the translation. In adding the new matter, care is taken not to confuse the clearcut scheme of Falta, who so admirably separates the various groups of ductless-gland diseases by well-defined lines.

As to the translation itself, no fault can be found with it. Occasionally, when the editor could think of no corresponding English expression, he gives an approximate meaning, with the German word in brackets. It is especially to the ductless glands with more or less well-defined internal secretions (endocrine organs), that the attention is directed, so that bodies such as the spleen, diseases of which are described in relation to those of the hematopoietic system and the carotid body, are not considered here.

CABOT: PHYSICAL DIAGNOSIS

Physical Diagnosis. By Richard C. Cabot, M. D. Sixth edition, revised and enlarged. With 6 plates and 268 figures in the text. New York: William Wood & Co. 1915. Price \$3.25.

Doctor Cabot is probably the best teacher of physical diagnosis in the country. He is, in addition, a big man, who includes his work as a whole includes its parts. He, himself, is much greater than any part of his work, or the whole of it; and he stamps all his work

with his own greatness. It stands out all over his "Diagnosis," which now is in its sixth edition. One is impressed with the unaffected simplicity and breadth of the subject as Cabot presents it. One also wonders, as one always does when a master expounds a subject, whether it really can be as simple as that, hardly realizing that it is the simplicity of fundamentals and elementals.

When, several years ago, Oswald Vierordt, issued for Americans an English translation of his "Medical Diagnosis," we predicted that it would sweep all other textbooks from the American field, because it dealt, elementally, with principles of diagnosis, instead of with complex details. Strange to say, that very quality defeated its use in our American schools. The American student and physician were not yet educated to that sort of teaching. But Cabot, by his personal force, has achieved that which Vierordt *in absentia* could not do—he has swung the American student around to the study of diagnosis through broad, elemental principles; and the popularity of his own book is witness to the thoroughness of his achievement. Cabot is the Vierordt of the United States.

GRIFFITH: "CARE OF THE BABY"

The Care of the Baby: A Manual for Mothers and Nurses. By J. P. Crozier Griffith, M. D. Sixth edition, thoroughly revised. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$1.50.

When we reviewed the preceding edition of Doctor Griffith's excellent manual, we predicted that it would not be long before it would be exhausted and another issue called for; but we confess we hardly expected so quick a verification of this prediction. Not, however, that we are a bit surprised. We know of no man in the United States possessed of a more intimate and intelligent knowledge of the baby, from the standpoint of its health and care, or who has a happier way of imparting that knowledge, in plain, understandable language, to the mother and the nurse; so that, as a matter of fact, the name of Crozier Griffith has become classically identified with this important subject.

The book very properly begins with the time "before the baby comes," and then takes us through every phase of infant-life and care of the baby, giving the most sensible and helpful directions concerning its feeding, toilet, clothes, sleep, training, quarters, and, in short, every conceivable aspect of baby-life. There is a chapter on dietary—not a detailed affair, but just the basic principles of the subject, for fundamental guidance—and a section on the sick baby, in which instructions are given for the management of the commoner minor ailments that affect the infant. Everything in the book is scientific and up to date, without being ultra scientific or impracticable. We can think of no better or safer guide for the mother or the nurse, and the family doctor should not fail to recommend it.

SHAMBERG: "SKIN DISEASES AND ERUPTIONS"

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Shambert, A. B., M. D. Third edition, thoroughly revised. Fully illustrated. Philadelphia and London: W. B. Saunders & Co. 1915. Price \$3.00.

In former times, the study of dermatology was limited to those pathologic conditions that began and ended in the skin. Of late years, however, our conception of the subject has broadened, so as to embrace a consideration of all morbid conditions manifesting themselves, either wholly or in part, in the skin; this, naturally, taking in all diseases characterized by cutaneous manifestations.

Thus the function of the dermatologist is given greater dignity as well as greater import. Under this conception of dermatology, the specialist in skin diseases not only must be able to diagnose the ordinary dermatoses, but capable of differentiating the eruptions of the various febrile ailments, as also the cutaneous signs of constitutional diseases, such as tuberculosis and syphilis.

Doctor Shambert devotes a special chapter to the treatment of the eruptive fevers, giving a great deal more space to their diagnosis than is usually accorded them in textbooks on skin diseases. This he believes to be justified by their importance; and herein we heartily agree with him. Besides the disorders generally classed as exanthemata, there are included in this chapter the incidental eruptions attending such diseases as, for instance, typhoid fever, rheumatic fever, malaria, meningitis.

The entire book is practical and to the point. One could have wished, however, that the illustrations had been in colors, since color plays so large a part in the recognition of skin lesions. It must be admitted, nevertheless, that even without the coloring the plates afford an excellent representation of the lesions they are designed to illustrate.

KRAUSE: "HISTOLOGY"

A Textbook of Histology. By Rudolph Krause. Translated from the original manuscript. With 36 illustrations. New York: The Rebman Company. 1915. Price \$2.50.

Although we are not quite clear on the matter and the introduction does not shed any definite light upon it, we take it that this volume is a sort of supplement to the previous publication, made by the Rebman Company, from the pen of Krause, under the title of "Normal Histology," which we had the pleasure of reviewing some two years ago. Indeed, now we come to examine a little more closely, there is indirect testimony to this fact in the introduction, for, we are told that the plates and figures quoted in this book refer to those contained in "Normal Histology."

Professor Krause, (of Berlin, Germany), justly attaches great importance to the matter of drawing the specimens from the microscope. And this book, like its predecessor, excels in its illustrations, which, for all practical purposes, are fully equal to the actual slide. Indeed, many of them represent preparations such as the average student will never make or see in the original. The beautiful series of drawings will in themselves, serve the reader as an excellent course in histology. It really is marvelous that so splendid a work of science and art can be put in our hands at relatively so low a cost; and The Rebman Company has earned our gratitude for achieving this wonderwork.

JELIFFE AND WHITE: "NEUROLOGY AND PSYCHIATRY"

Diseases of the Nervous System: A Text-book of Neurology and Psychiatry. By Smith Ely Jeliffe, M. D., Ph. D.; and William A. White, M. D. With 331 engravings and 11 plates. Philadelphia and New York: Lea & Febiger. 1915. Price \$6.00.

There is really not much to be said of this book that has not already been said, many times over, in regard to other books on neurology. Indeed, we could very earnestly wish that there might be more to say. That,

however, is not altogether the fault of the authors, Doctors Jeliffe and White, but, rather, is owing to the disappointingly slow progress made in neurology, as compared with other departments of medical science. In every other branch of medicine the tendency during the last fifty years has been to reduce the concepts of disease to the fewest possible number of the least common denominators, while at the same time adding materially to our knowledge of their clinical aspects.

For neurology, contrariwise, the tendency seems to be to extend our concepts into the greatest number of multiples and to increase and confuse classification without adding anything material to our actual knowledge. Diseases of the nervous system still remain disconnected, isolated entities, having neither pathological nor clinical relation to each other or to any underlying concepts. All of which is offered, not in criticism of Jeliffe and White's work, but in comment upon neurology in general. This book is as satisfactory, after its kind, as the state of our knowledge will permit.

ROBINSON: "TREATMENT OF GONORHEA"

The Treatment of Gonorrhea and Its Complications in Men and Women. For the General Practitioner. By William J. Robinson, M. D., Editor of *The Critic and Guide* and *American Journal of Urology, Venereal and Sexual Diseases*, etc. New York: The Critic and Guide Company. 1915. Price \$2.50.

On the title page this book is declared to be "For the General Practitioner," and careful examination makes good the claim. The subject of gonorrhea is treated in such a lucid way and with such careful attention to detail that any general practitioner of average intelligence can secure through its perusal the knowledge necessary to handle any ordinary case of the disease with satisfaction and success.

Doctor Robinson is not a pessimist. He does not look upon gonorrhea as an incurable disease, in this respect differing from the morbid and melancholy position taken by many modern writers and sociologists. He also believes that not to exceed twenty-five percent of the population ever suffer from the disease, again going counter to popular opinion.

In treating the topic of gonorrhea, he begins at the beginning, with the germ and

the technic for its recognition. Then he describes the course and symptomatology of the disease, and outlines the treatment for an ordinary acute case. He also takes up the nongonorrhreal types of urethritis, but devotes the largest portion of his book to the discussion of chronic forms of gonorrhea and its complications. Naturally and properly, most attention is given to therapy. Of special interest to the readers of *Clinical Medicine* are the chapters on prostatitis, which have been considerably elaborated in a series of articles now appearing in this journal.

The latter portion of the book contains a wealth of detail regarding treatment, the use of the silver salts, antiseptics, vegetable astringents, the abortive treatment, and, finally, a useful formulary. The book is one which it gives us much pleasure to recommend.

WILSON: "HYGIENE"

Student's Textbook of Hygiene. By W. James Wilson, M. D., D. Sc. New York: The Rebman Company. 1915. Price \$2.50.

The author occupies the post of lecturer on hygiene and public health at Queen's University, Belfast (Ireland), and this book is based on a course of lectures delivered by him during the past seven years at that institution. It is written especially to meet the requirements of students of medicine, and, therefore, ought to constitute an excellent textbook for teaching purposes in medical schools. However, this is by no means the limit of its scope of usefulness, for unquestionably it will prove of value to sanitary inspectors, health-officers, and, in fact, to all who are in any way interested in public health.

As the author quite properly points out, it is impossible for a textbook of this limited size and character to do more than deal with the principles of the science of hygiene and to indicate their application. It is manifestly impracticable, for example, to go into all the details of water, food, and air analyses; and these are better learned in the laboratory, anyway. Sufficient information is contained in this volume, nevertheless, to enable the reader to understand the meaning and the value of such analyses, and to appreciate the responsibilities resting upon health-officers, general practitioners, and private individuals, with regard to the preservation of the health of the community.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6174.—“Painless Cure of Hemorrhoids.” I am amused by the query on page 196 of February CLINICAL MEDICINE, on the one-day painless cure of hemorrhoids, and your comments thereon. Permit me to say that the treatment of hemorrhoids there referred to undoubtedly is the same that I have advocated and used—though “twenty-four hours” is rather quicker than the time of cure commonly observed.

It is so easy, you know, to say to a nervous patient who probably would refuse having a needle thrust into a painful hemorrhoid, “I will just make a special application to your pile”; and this, I presume, that doctor in question does say, and then proceeds to make the [phenol?] injection with so little pain and no after-soreness that the patient is not aware of what was done.

Of course, this cannot be done in all cases, but may be in a large percentage. In my own person (I treated myself), I did not know when the tumor dropped off, but, out of

four, three were gone within three days or less.

There is no other way to get such results, I feel sure.

C. A. FREEMAN.

Geary, Okla.

ANSWER TO QUERY 6167.—I am much interested in the Query 6167. Your advice relative to the iodine is good, but I think that it would be very much better to give iodine intravenously and also to give large doses (8 grs. or larger) of cacodylate of soda; even though there may be no history of syphilis organic arsenic will sometimes do wonders in clearing up these cases.

I hope you will publish the report of your pathologist on the smears.

CLINICAL MEDICINE is still my favorite and eagerly scanned for articles of special interest to me.

W. N. FOWLER.

Kalamazoo, Mich.

Queries

QUERY 6182.—“Chronic (Recurrent) Stomatitis.” C. L. R., Oklahoma, is treating a woman, aged twenty-one, whose mouth, throat, and tongue, he explains, “become so raw and sore each month that she cannot eat or swallow without pain, while her gums appear as if she had been salivated, and her breath is very offensive. She has been thus troubled for several years, although not so badly until the last year or so. This condition will improve more or less in the course of the month, but invariably recurs.”

It is evident that the treatment in this case, to be effective, must be based upon a clear conception of causative conditions. It is just possible that she has pyorrhœa alveolaris, which for some systemic reason becomes

aggravated at the monthly period; on the other hand, it is more than likely that the woman’s body-chemistry is seriously deranged and in consequence the autotoxemia during her menstrual periods becomes so pronounced that the “weak spot,” the area of least resistance—in this case the buccal mucosa—is the one attacked.

It would be well for you to have a specimen of this patient’s urine examined, as well as a smear from the gingival margin taken when the infection is at its height. See whether at any time you can express pus from around the roots of the teeth. Then, in your letter, describe the condition of the tongue: Is it heavily coated; if so, is this coating around the center or on the base?

Also, what is the color of the coating? Has she any carious teeth? Is she constipated? her menstrual flow offensive? Is there leucorrhœa between periods? Are there present any abnormalities of the pelvic viscera? Are her feet cold or do they perspire freely—that is, so as to soak the stockings; if so, has the perspiration an offensive odor? What is the pulse rate? Has the patient ever had typhoid fever or rheumatism? All these are questions of importance in arriving at a tenable conclusion. Other obvious irregularities should be noted and stated.

QUERY 6183.—“Streptococcus or Mixed Infection?” A. I., Wisconsin, is “treating two cases of streptococcus infection, both following an attack of socalled grip. A noted Wisconsin laboratory has found the streptococcus.” There is some cough, no fever, and the temperature shows a tendency to be subnormal from 1° to 1.5° F. in the morning, and this gradually rising as the noon-hour approaches. One of the patients is troubled with increased bronchial breathing, the other has more or less pleuritic pain on the left side, more pronounced after eating. Both subjects “catch cold” very easily, even when merely changing stockings or underclothing, or on the least change of the weather. The question is asked whether possibly the streptococcus infection is causing most of the trouble of these patients, and would a vaccine prove beneficial?

As to the last question, we hesitate to prescribe a vaccine, in the absence of more exact knowledge of the nature of the infection. You merely tell us that you “have two cases of streptococcus infection.” We gather that the sputum shows streptococci, staphylococci, probably some influenza bacilli and micrococci catarrhalis—a typical “mixed infection.” In such cases, the pneumococcus combined bacterin may be given to advantage, the patient at the same time receiving, by mouth, the following: nuclein-solution, m. 10; guaiacol carbonate, gr. 1; calcidin, gr. 1-2; with 5 minims of nuclein additional, repeated three times daily. Also, every three hours (four times daily), quinine salicylate, gr. 1; echinacoid, gr. 1; and calcium sulphide, gr. 1-3.

The nares, nasopharynx, and buccal cavity should be thoroughly cleansed with an alkaline antiseptic two or three times daily, and then the patient inhale vaporized camphor-menthol.

If the cough is troublesome, collinsonoid with apomorphine should be ordered every

two or three hours; the tablet being slowly dissolved in the mouth.

In all these cases, iodine, nuclein, and quinine may be regarded as the dominant remedies, with calcium sulphide as the most useful alternant. If patients are saturated with calcium sulphide and given quinine and iodine to effect, socalled grippal attacks are very mild and of short duration.

QUERY 6184.—“Hemianopia of Thrombotic Origin?” J. G. D., Illinois, submits the following case: “The patient, a woman of fifty-one, with negative family history, presents the following most remarkable history and symptoms:

“Twenty-one years ago, she had typhoid fever, which ran the regular course, although complicated by a thrombosis in the left iliac vein; but recovery was complete and uninterrupted. Seven years after that sickness, she experienced a sudden attack of hemianopia in the left half of the visual field, and from this she has never recovered. Although the ‘specific’ history and findings elicited were negative, she was placed upon ‘antispecific’ treatment. This did no good. She took potassium iodide to the extent of 150 grains per day, without exhibiting any signs of iodism. Last March, she experienced a slight paralytic stroke on the left side of the body. This seems to be permanent. At the present time, the woman is extremely nervous and displays a highly neurotic disposition. Tests of the urine, blood, and the reflexes all give negative results. In my opinion, the trouble points directly to the thrombosis that occurred when she had the typhoid fever, the hemianopia and the paralysis resulting directly from the emboli from the thrombus in the vein. Can you suggest a course of treatment?”

Frankly, doctor, after considering the facts as presented, we are inclined to believe that, while typhoid fever may have played some indirect part in the etiology, it was not of the importance you attribute to it. To be specific, hemianopia is practically never caused by embolism. The vessels involved in hemianopia are those of the fasciculus of Gratiolet, and it is almost unthinkable that emboli should ever invade those blood-vessels. Embolism almost invariably attacks the vertebral or the basilar arteries, and these do not result in hemianopia.

Despite the rather early age at which this patient suffered her attack of hemianopia, we believe it was due to hemorrhage in the optic fasciculus; and that her later attack of

hemiplegia is probably owing to the same thing in the capsule. It may, possibly, be a thrombosis, which not infrequently is quite sudden in its final denouement; but hemorrhage is much more likely.

Unfortunately, treatment can only be symptomatic. Although the hemorrhages thus far have not been serious, we must bear in mind the possibility of a severe and fatal one to ensue at any time. Should this not occur, the organized degeneration started by the present hemorrhage may go on increasing and, thus, finally cause death. On the other hand, the woman may live for many years without experiencing any further cerebral trouble, and eventually die from some other cause.

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QUERY 6185.—“Chronic Ulcers.” O. M. C., Florida, is confronted by a peculiar condition, new to him, in the shape of a great number of chronic ulcers, breaking out on a patient’s leg and foot. “They were just sores that grew worse and worse, until they were about the size of a silver quarter. The ulcers are intensely red, and there is considerable discharge that is quite hard to remove. They are generally quite depressed, with well-defined and abrupt edges, but particularly thick and hard. There seems to be an absence of granulations. These ulcers have resulted from slight injuries, and they are intensely painful at times. There seems to be nothing wrong with the general health of patient.” The Doctor has vainly tried cleansing with hydrogen peroxide and also phenol solution; has tried permanent wet dressings followed by ointments containing balsam of Peru, scarlet-red, and other remedies. The patient objects to bandaging the entire limb.

We must regretfully admit that there are few things more trying to the patience of the practician than the management of leg-ulcers, particularly when the patient cannot or will not remain quiet for a time and give the limb the benefit of rest and elevation.

We are inclined to believe that thorough cleansing of the ulcers with hydrogen peroxide and the subsequent application of iodized camphorphenol (equal parts of carbolic acid and camphor triturated together with iodine, 5 grains to each ounce), twice daily for two or three days, then of an astringent ointment on gauze, this covered with a snug elastic bandage, will prove effective in the variety of ulcer you describe. However, a more radical procedure may be required.

Small quantities of a local anesthetic may be injected at several points around the ulcer until it becomes insensitive; then curette with a sharp spoon. The whole surrounding area should be closely shaved and thoroughly washed and then a moderately thick layer of Unna’s paste applied.

Bear in mind that in all these cases thorough elimination is essential. The patient usually also requires reconstructive tonics—triple arsenates with nuclein, a dose two or three times daily, will meet the requirements in the majority of instances.

Where the ulcer is intractable, staphylococci may be injected. Small ulcers sometimes will heal under a coat of benzoinated collodion.

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QUERY 6186.—“The Use of Calx Iodata During Pregnancy.” N. C., Iowa, wishes to know whether there is any danger in giving pregnant women calx iodata, or to what extent its use may be carried without producing abortion. He has used it without encountering bad results, but has wondered whether the iodine content might not cause abortion in a pregnant woman.

This writer has used calcidin (calx iodata) for some fifteen years and has frequently given it “to effect” to pregnant women, without observing the slightest undesirable symptoms. Indeed, iodine in therapeutic doses is not likely to produce abortion, and, as presented in calx iodata, certainly would not do so.

It is a question, of course, whether oversaturation, i. e., the production of iodism, under such circumstances would be desirable; and it is conceivable that under such conditions extremely sensitive women might abort.

During the first two or three months of pregnancy, iodine—or any other potent alterative drug—should be given with a certain amount of caution; and here, as elsewhere, it would be well to withhold the administration of the drug for three or four days of each month, eliminating freely meanwhile.

As a matter of fact, however, save in tuberculosis and similar conditions, it is rarely necessary to administer calcidin in large doses for a prolonged period of time, while during pregnancy, even under such circumstances, active medication is rarely desirable.

In all acute diseases to which a pregnant woman is subject, calcidin, in the usual dose,

may, therefore, be given to effect with perfect safety.

QUERY 6187.—"Resinous Paste for Making Splint." H., Nebraska, writes: "In the work on diseases of children by Pfaundler and Schlossman (translated by Shaw and La Fetta) there is given a formula for a paste to be used in cases of club-foot, which reads as follows: colophony, 50; mastich, 25; alcohol, 95 percent, 360; terebinth, 30; res. alb., 15. Will you kindly translate this into a working-formula which an ordinary druggist can understand?"

In ordinary American terms, this formula reads as follows; the figures represent parts, percentages, ounces, or any chosen units: Take of colophony, or yellow rosin, 50 parts; gum mastic, 25 parts; alcohol, 95 percent, 360 parts; crude, or thick, turpentine (see U. S. P.), 30 parts; white rosin, 15 parts. Dissolve the rosin and mastic in the alcohol, before adding the crude turpentine. The reason for the white rosin in the formula is not at all apparent. Crude turpentine is rarely found in drugstores nowadays, except very ancient ones.

QUERY 6188.—"Giving Calcium Sulphide to Young Children." W. S. R., Ohio, asks: "In what form can I give calcium sulphide to children too small to take the granules? I prescribe it largely in whooping-cough, but am unable to give the drug to infants."

We suggest that you crush the granule of calcium sulphide (gr. 1-6) with a little milk-sugar, place the powder on the child's tongue, then let the baby be given its bottle, or a teaspoonful or two of water, or be placed at the breast. A solution of the drug cannot be termed palatable, but may, of course, be used. It should, however, be made freshly each day and remain covered. However, the present writer has never had the slightest trouble in giving calcium-sulphide granules to infants. Simply flatten the granule with a knife-blade, put it on the tongue, then give the child some fluid to swallow. That's all.

It is a very simple matter, though, to crush six or twelve granules, mix the powder with the desired quantity of sugar of milk, and dispense this in the form of powders, directing one of these to be given every two or three hours.

For a liquid mixture, it is an excellent idea to use a petroleum emulsion as a base. Dissolve the necessary number of calcium-sulphide granules or tablets in a little hot water, then

for each dose add 1-2 or 1 teaspoonful of the emulsion and mix well. The dose will be from 30 to 60 drops every one, two or three hours, according to circumstances. The mixture must be shaken before the medicine is poured out.

Also see the article on "Palatable Prescribing for Children," which appeared in the September (1915) issue.

QUERY 6189.—"Trphoneurosis?" J. R., Indiana, is treating a woman 70 years of age who five years ago began to have a feeling of "soreness" on the top of her head, this spot being not larger than a dollar, but the area gradually increased, until now it is almost four inches in diameter. The sensation is a very disagreeable one, sometimes feeling cold, sometimes hot. There is some pain most of the time, and the scalp is very sore when touched. Otherwise her health seems to be pretty good. "However," the Doctor writes, "about two months ago, the woman began to feel a dead, heavy aching in the left shoulder, which extended down the arm to the fingers. Now the other shoulder, arm, and hand are affected in about the same way. She calls it a constant 'dead, heavy boneache,' plaguing her day and night and permitting of no rest or sleep. It is somewhat sore to the touch, but not swollen or reddish; objectively, one cannot see anything wrong. Her bowels are moving all right; she has no heart trouble; temperature is normal; tongue is clean; kidneys are acting, seemingly, as they should, and the urine is of about the right color, although depositing some white sediment; there is no soreness of the liver, kidneys, spleen, stomach or spinal column. This woman has been treated by half a dozen other physicians, but all have failed to give the malady a name or to do her any good. What is it?"

Unfortunately, the clinical picture is not clear enough to enable us to venture a definite diagnosis.

Pain in the "top of the head" (the vertex), especially when the area involved is not much larger than two or three inches in extent, is, as undoubtedly you are aware, due either to some hemic disorder (anemia) or to neurasthenia. Epilepsy can be excluded. The possibility of hysteria must be seriously considered, though there may be present some uterine or vesical disease, and this reflexly causes the sensations in the scalp.

The "deep bone pains" developing later in both arms constitute a somewhat peculiar

symptom, which leads us to think particularly of rheumatism; that is, autointoxication—the retention of waste material in the system.

You state that you discover no cardiac disorder. Valvular disease, therefore, may be excluded, together with angina pectoris. An enlarged spleen might cause pain in the *left* arm. Neuritis is almost always unilateral, as is also cervicobrachial neuralgia.

There remain to be considered paralysis agitans (but as to this other essential symptoms are lacking), syringomyelia, and progressive muscular atrophy. However, no evidence of the existence of these latter diseases seems to exist. Naturally, the advanced age of the patient would lead us to look for degenerative changes; and quite probably more or less arteriosclerosis is present. In addition, the possibility of a cerebral tumor must not be lost sight of.

Send to a good pathologist for examination a specimen of the woman's urine (4 ounces of the 24-hour output, stating the total quantity voided). Test the reflexes carefully. See whether you can discover tenderness on deep pressure along the spine. State the present and former weight of the patient. Make a very careful examination of the pelvic organs. Then report in full.

We are inclined to believe that improvement will follow thorough elimination and the maintenance of a therapeutically clean digestive tract, supplemented by careful dieting and an epsom-salt sponge-bath given every second or third night.

As a first procedure, doctor, place the patient on her right side and give her a copious salt-water enema. Then give calomel, 1-6 of a grain or blue mass and soda, gr. 1-2; podophyllin, gr. 1-6; irisoid, gr. 1-6; given half-hourly for four doses. Then, a few hours later, a full dose of a saline laxative. For the pain, give, every three hours, salicylic acid (natural), gr. 1; calcidin, gr. 1-3; colchicine, gr. 1-250; bryonin, gr. 1-12S; macrotoid, gr. 1-12; boldine hydrobromide, gr. 1-64; together with suitable aromatics; to be taken with 4 ounces of hot water. Also, order bilein, gr. 1-12, with pancreatin, one hour after each meal. Every second or third night, have the entire body sponged with epsom-salt solution (1 ounce to 3 pints of water), followed by an alcohol-rub.

Faradization of the spine, or the application of the high-frequency current may prove beneficial. Be very positive in your suggestions. However, the prognosis, so far as

recovery is concerned, should be somewhat guarded.

QUERY 6190.—“Dosage of Staphylo-Acne-Bacterin.” E. N. F., Ohio, desires information concerning the use of polyvalent staphylo-acne-bacterin. He writes: “As an ampule contains 550,000,000 killed bacilli and the initial dose is 50 to 250 million, one such ampule would contain from two to ten doses. Is this correct? What may be regarded as a safe initial dose for a girl eighteen years old, whose condition is not severe—being afflicted with a good many blackheads, or comedones, and a moderate number of pimples containing pus? If too large a dose is given, what reaction will occur? If the doses are not large enough, how may I know? Is each successive dose after the initial one to be increased? If so, by how much; and what determines this increase?”

One ampule of staphylo-acne-bacterin contains, as you say, 500,000,000 killed mixed staphylococci, and 50,000,000 acne-bacilli. The initial dose being from 50 to 250 million killed bacteria, one ampule contains, as you also figure it, from two to ten initial doses.

The initial dose of 50,000,000 is necessarily a small one, but is fixed at that amount because the dose is figured approximately upon the number of acne-bacilli, of which latter 5,000,000 is the initial dose in the case of children; and, besides, it is often preferred by those who are very cautious, lest they produce any reaction whatever by it, inasmuch as many patients entertain a definite horror or fear of hypodermic injections.

A woman of eighteen, who is of fair physique, should receive as an initial dose about 250,000,000 organisms, that is, one-half of an ampule. If this happens to be too much, there will occur a reaction of the nature described in appropriate literature, including a rise of temperature, marked depression, and some local pain and swelling, which sets in within a few hours after the injection but rarely lasts longer than forty-eight hours. If the dose is insufficient, no clinical reaction occurs, and no—or practically no—improvement in the pathological condition follows.

After the initial dose of one-half ampuleful, we should give the entire contents of one ampule for the second dose. If this does not produce too much of a reaction, we should continue this dosage for five or six doses, and then give the contents of two ampules at a time, repeating this for five or six doses. It is but rarely advisable to administer more than the contents of two ampules as a dose

at one time. It probably will be better to give one ampule every four days, instead of two every seven days; in other words, shorten the intervals, instead of increasing the dose.

It is essential that the directions as to hot fomentations or other methods of increasing the local blood supply at the site of the lesions be thoroughly carried out. All comedones must be expressed and all pustules incised. It is impossible to cure acne if the cuticular glands remain filled with sebaceous material, as evidenced by large numbers of comedones. These act as irritating foreign bodies and must be removed.

Do not forget to pay particular attention to the gastrointestinal tract, making sure that the patient is not suffering from constipation. Also, the urine must be examined, to be sure that there is no evidence of indican in large amounts, thus indicating a marked digestive disturbance and absorption of toxins from decomposing fecal material, which are constantly poisoning the patient to such an extent that there are no reserve forces capable of stimulation by bacterins or any other means. In such a condition, it is impossible to cure acne with bacterins or any other known means.

QUERY 6191.—“Obscure Pain in Thigh.” E. E. F., Oklahoma, asks for diagnosis for a case presenting severe pain, with little or no swelling, on inside of thigh of the left leg, occurring in a male, age 44. Tongue and breath very foul, temperature 102° F., constipation, urine highly colored and scant, negative as to albumin and sugar. The doctor gave 12 percent solution urea and quinine subcutaneously, which controlled local pain, and it has not returned, but the foot and ankle began to swell the next day, gradually extending to groin, and this still continues after return to normal in all other respects. He asks: “Is this a case of elephantiasis? The swelling is not improved by rest and elevation, but he feels better with moderate exercise. Would hot-air treatment benefit? There is a slight rash on instep which I have attributed to heat from rubber shoe.”

We have very carefully considered the clinical data presented, and regret to say

with our limited knowledge of basal pathological conditions it is impossible to venture a diagnostic or therapeutic suggestion. It is hardly likely that you have to deal with a case of elephantiasis. The swelling about the ankle may be due, as you are of course aware, to any one of several conditions. As the edema did not make its appearance until the urea and quinine was injected, it is quite possible normal conditions will return after thorough elimination, renal, dermal and intestinal, and application of hot compresses, followed by proper massage, to the affected extremity.

On the other hand, the possibility of obstruction—thrombotic or otherwise—must be borne in mind. You do not state whether there is still any pain or if the parts pit upon pressure; any luetic taint; patient addicted to the use of alcohol.

If any reader of this Journal can throw any light on the diagnosis of this case we shall be glad to hear from him.

QUERY 6192.—“Lycopodium.” J. McD., Pennsylvania, wants information regarding the action of lycopodium, especially when insufflated.

Lycopodium is an odorless, tasteless and, in the estimation of most physicians, therapeutically inert substance.

In olden days, lycopodium, the spores of club-moss (see Dispensatory), was considered to possess diuretic and antispasmodic properties, but nowadays by many is considered inert, and is chiefly used in rolling out pill-masses to prevent its “sticking”; it also is considered an excellent protective dusting-powder for excoriated surfaces, especially for infants.

Homeopathic practitioners administer lycopodium, in various attenuations, in affections of the mucous tracts, flatulence, constipation, ileocolitis, hepatic congestion, aneurism, chronic affections of the lungs and bronchi, diphtheria, lithiasis, pruritus ani, and many skin diseases.

When insufflated, lycopodium might at first act as a mild irritant as any foreign body, causing sneezing, lacrimation, and so on. Many people, however, inhale the substance without experiencing any effect whatever.



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Making the Patient Comfortable

UNDER the very timely title of the above heading, Dr. H. K. Shumaker contributes to *The Medical Council* two pages of excellent suggestions concerning what might be called the personal side of medical practice; and, except for the limitations of his own time and of the journal's valuable space, he might well have lengthened his writing into as many hundred pages without exhausting either the interest or the importance of the subject.

"No physician," says Doctor Shumaker, at the outset of his remarks, "however well educated, is fully prepared for his life-work until he has passed through a serious illness." Which reminds one of the similar dictum of the author of "*Confessio Medici*" (that delightful book which I fain would put into the hands of every medical graduate in the land): "You cannot be a perfect doctor until you have been a patient; you cannot be a perfect surgeon until you have enjoyed in your own person some surgical experience."

"Perhaps," continues this author, "you have never been seriously ill, never come to that point of sharp thought where the physician, the surgeon, the anesthetist are your best friends, your Godsends, not because they talk to you about the National Gallery, but just because they do *not* talk,

but dose, anesthetize, and incise you. Every doctor, early in his course, ought to stand at that point."

It would certainly do us all good to stand there. But, whether we do or not, we must, somehow or other, learn the lessons that are to be learned only by putting ourselves in the patient's place, if not actually, then in imagination. We are a little too prone, all of us, in these days of high tension and exacting demands, to let technical skill and erudition shut out the more human phases of our work and influence. We need continually to remind ourselves that we are dealing, not with a bad heart or a diseased liver, or an inflamed kidney, but with a human patient, a man like ourselves; and we need to bring our far-seeing gaze in from the searchlight of the microscope occasionally, and direct it to the homely task of making the patient comfortable.

This lesson applies both to the seemingly trivial (nothing, indeed, really is "trivial" in the care of a sick person) and to the larger aspects of the situation, from the adjustment of the window-shades of the sick-room to the consideration of the psychology underlying the patient's disease and his reaction to treatment. In this whole range of applica-

tion, it is our duty to "make the patient comfortable."

As an instance of the little things in which this ministry to the patient's comfort is to be carried out, Doctor Shumaker mentions the palatability of the medicine which we prescribe. "Occasionally," he writes, "it may be necessary to inflict a nauseous medicine on a sick man, but, when about to do so, let the doctor remember the golden rule and take another thought concerning the prescription." Happily, the doctor who uses active principles is not often faced by such a problem as this; and those practitioners who are confronted by it may find a happy solution in the alkaloidal preparations, which are as easy to take as they are effective in results.

This, of course, is but one little example of the way in which the doctor may minister to the patient's comfort. There are a hundred and one human touches which experience and the spirit of sympathy will teach him.

I cannot refrain from quoting a little further from "Confessio Medici" on this question of getting the patient's viewpoint:

"To be ill or to undergo an operation, is to learn the comforts and discomforts of an invalid's life; the unearthly fragrance of tea at daybreak, the disappointment of rice-pudding when you thought it was going to be orange-jelly, and the behavior of each constituent part of the bedclothes. You know, henceforth, how many hours there are in a sleepless night; what unclean fancies will not let us alone when we are ill; how illness may blunt anxiety and fear, so that the patient is dull, but not unhappy or worried; and how we cling to life, not from any terror of death nor with any clear desire for the remainder of life, but by nature, not by logic.

"In brief, you learn from your own case many facts which are not in textbooks and lectures; and your patients, in the years to come, will say that they prefer you to the other doctor, because you seem to understand exactly how they feel. I wish you, therefore, young man, early in your career, a serious illness or an operation, or both. For, thus, and thus alone, may you complete your medical education and crown your learning with the pure gold of experience."

Then, of course, there are the larger and deeper aspects of our patients' human nature which demand our consideration. Of these, I cannot here speak at length, but only hint at them. I wish every doctor in the world could read Cabot's "Social Service and the Art of Healing"; for, there he would find this broader phase of the subject set forth

far more simply and clearly and inspiringly than I could hope to do it, were I to try.

"The enormous influence of spiritual environment, of friendship, of happiness, of beauty, of success, of religion," says Cabot, "is grievously, ludicrously underestimated by most physicians, nurses, and hospital superintendents. There are diseases that cannot be cured without friendship, patients who never will get well unless you can get them to make a success of something or to conquer their own self-absorption by a self-devotion, losing their life to find it." All of which is but an extension of the intimate psychology of "making the patient comfortable."

The bluebird chants, from the elm's long branches.

A hymn to welcome the budding year.

The south wind wanders from field to forest,

And softly whispers, "The spring is here."

—W. C. Bryant.

DISPENSING NARCOTICS IN INDIANA: WATCH OUT!

In the Miscellaneous Department of this issue, we are reproducing an editorial appearing in the March issue of *The Journal of The Indiana State Medical Association*; this article giving the status of the efforts that have been made by the Board of Pharmacy of that state to prevent physicians from dispensing narcotic drugs. This matter, it will be remembered, was discussed editorially in CLINICAL MEDICINE for February.

We strongly advise every one of our readers, whether he lives in Indiana or elsewhere, to familiarize himself with this subject, for, this attack upon the right of practitioners to dispense narcotic drugs undoubtedly is only a part of a larger issue that has been raised and is being agitated by certain elements of the retail drug trade.

Anyone who follows the discussions of this question in the drug journals and endeavors to keep in touch with the course of legislation cannot doubt that a more or less determined effort is being made to prevent physicians from dispensing their own drugs. Limitation of the right to dispense narcotics, if secured, surely soon will be followed by similar curtailment of the right to dispense other poisons—strychnine, aconite, hyoscine, arsenic, mercury—the end aimed at being, of course, the entire and complete prohibition of all dispensing on the part of the physician, except in emergencies; the actual handling of medicines to be transferred to the drug trade, with all the emoluments and advantages thereto appertaining.

It is because there is such a trend and such an effort, that it behooves the medical profession to keep closely in touch with the situation and to permit no encroachment upon their ancient rights.

In saying this, however we wish it understood that we are advocating no fight with the pharmacist. The pharmaceutical profession and the medical profession should be in full harmony with each other and on friendly terms. These two honorable professions have too much in common to be flying constantly at each other's throats.

"To the scientist there is nothing so tragic on earth as the sight of a fat man eating a potato." Culled from "Eat and Grow Thin."

THE OCCASIONAL DRINKER AND THE MECHANICS OF ALCOHOL

A great many people delude themselves into the belief that moderate indulgence in alcohol does not hurt them, and likewise can not hurt anyone else. For the man who likes his "little drink," this is a very pleasant frame of mind. However, when the problem is illuminated by the cold, clear light of science, we find that the occasional drink is not the harmless thing some of us would like to believe.

Some very surprising facts relative to the effects produced by the consumption of even small amounts of wine or beer, when thus taken with meals or at any other time, are presented by our friend Dr. Edwin F. Bowers in an article appearing in *American Magazine* for April, supporting his position with the testimony supplied by various instruments of precision employed in measuring the physical and mental reactions after the ingestion of small quantities of alcoholic beverages. Thus, for instance, ergographic tests demonstrated that a glass of Bordeaux wine (equivalent to about 1-3 of an ounce of alcohol—freely diluted with water) regularly drank after each meal, reduces the ability of such person to withstand muscular fatigue by from 7.6 to 8 percent. These experiments, Doctor Bowers asserts, have been duplicated hundreds of times by various European scientists, and "in every instance a definite measurable loss of muscular efficiency was shown."

Other investigators, we are told, demonstrated that under the influence of such a small quantity of an alcoholic beverage the speed with which the subject is able to write figures and letters is reduced by from 5.6 to 7.3 percent, and this after the ingestion of

so small an amount as "just about what the ordinary drinker might take with his dinner." "Again and again," Doctor Bowers adds, "these same general results were secured, though new crews were used for each demonstration."

Experiments were also conducted with accountants both during periods of abstinence and of moderate indulgence in alcoholic drinks of, say, the strength of beer and wine. In their case, it was found that after two weeks of such moderate indulgence their output of work was reduced, on the average, by about 15 percent. Similar tests made with typesetters showed an average reduction of efficiency of 9.6 percent in one week.

When various tests were made to determine the effect of moderate drinking upon the memory, it was found that two weeks of such indulgence caused a reduction of between 6 2-3 to 14 percent in their ability to remember figures, while in individuals normally able to memorize 25 lines of Homer a reduction of 18 percent was demonstrated under the influence of the alcoholic. It was admitted, however, after a time, when these individuals had become accustomed to alcohol, the difference in ability to memorize was not so great, amounting to not more than between 5 and 7 percent. When alcohol was taken on an empty stomach, as, for instance, the first thing in the morning, its effect was much more pronounced, the reduction of efficiency in some instances amounting to nearly 70 percent.

Another very interesting series of tests was made, designed to establish the relation between visual acuity and muscular response; in other words, to determine how much more quickly a man not using alcohol is able to turn a switch after a signal, given by a flash of light or the raising of a colored flag, than one who indulges in such beverages. For instance, the subjects "were directed to press a button, which stopped the watch, and, so, recorded the length of time needed to perceive the flag, decide its color, and press the proper button to designate that color." Invariably the men using alcoholic beverages were from 6 to 13 percent slower in responding—assuredly a difference great enough to result in the ditching of a train should the engineer, under given circumstances, happen to have a little beer under his belt.

"These studies in exact science," Doctor Bowers writes in concluding his article, "made under the strictest conditions, indicate that alcohol depresses, anesthetizes, and narco-

tizes, and that its first effects on the nerves are, to diminish acuteness and pervert activity. Sending the blood to the head, where it surges through the brain with increased velocity, is not increased vigor, but increased irritation, which comes just before anesthesia and diminution of power. The drinker deludes himself, for he only thinks he is thinking. His very first drink has produced a definite, measurable degree of intoxication. Therefore, it seems quite clear that, if a man has any brains worth preserving, alcohol is the poorest preservative he could possibly pick out to use."

The most dangerous disease that afflicts humanity is not smallpox, pneumonia, typhoid, or even tuberculosis, which levies its grim toll upon one out of every twelve civilized humans. It is common constipation—not so much a disease in itself as a cause of other diseases.

—Dr. Edwin F. Bowers.

EPILEPSY UP TO DATE

Epilepsy stands high on the list of the opprobria of medicine. To many, there has been developed nothing especially new about its treatment since the introduction of the bromides. To the better-informed, the literature of the past half-century presents a succession of crude therapeutic suggestions, founded upon archaic or superficial hypotheses and so totally dissimilar as to possess little in common except the lack of success in their clinical application.

Occasionally there appears someone favored with the opportunity to study this strange malady firsthand in the Book of Nature, who is possessed of the ability to do so, and, lastly, who takes in the study of this difficult problem a certain heartfelt interest—and then it is that we get such results as are reported in Edward F. Leonard's paper published in the current number of *The Illinois Medical Journal*. As one of the staff of the Jacksonville State Hospital, Doctor Leonard had abundant opportunities to observe the manifestations of epilepsy, and here are some illustrative examples of what his studies have yielded.

As a rule, Doctor Leonard found, the chronic epileptics are stout and well nourished, and have a big appetite; they are chronically constipated; are little subject to diseases, except of the gastrointestinal type, and are without attacks of convulsion during and shortly after any illness; are not disposed to bedsores or infection of wounds; their breath has a sour odor during their fits; temperamentally they are stubborn and

quarrelsome, causing three-fourths of the disturbances occurring in their wards; their monotonous, drawling voice is diagnostic; their facial expression is dull and sullen; many cases resemble those of the catatonic type of dementia praecox, in fact, the two conditions may coincide.

Among the hypotheses regarding the etiology of epilepsy, Doctor Leonard mentions Haig's uric-acid, Krainsky's carbamate of ammonium, Donath's cholin, and Ceni's cytotoxin, and adds: "Of none of these, is there proof; the evidence points to these as effects rather than as causes." A summary of the results of the studies of excretion in 140 cases follows.

When patients were not having convulsions, the percentage of chlorides in the urine increased up to or above normal; calcium was more abundantly excreted. During convulsions, calcium excretion was slight or wanting; sodium chloride was diminished; convulsions varied with the percentage of Ca and NaCl in the urine. Four hours after convulsions, when the subject was sitting up, the sodium chloride rose to nearly normal and calcium reappeared. When the percentage of sodium chloride was normal or in excess, the calcium also rose; when the percentage decreased, calcium almost always was absent, and nearly so in the few exceptions.

During convulsions, the blood was thicker, darker, coagulated faster, formed larger and firmer clots, and contained many calcium-carbonate crystals, some calcium oxalate and some phosphate crystals. Four hours after the convolution, the blood was lighter-colored, thinner, less quickly coagulable, the clot softer, and the calcium-salt crystals were about normal.

There appears to be a well-marked antagonism between the calcium salts and those of potassium and sodium, the former promoting contraction, the latter, relaxation. Calcium salts in small doses promote anabolism, but catabolism in large doses. They are toxic when not counteracted by the alkali elements. Pugh has said that the alkalinity of the blood in epileptics is constantly lower than in normal persons, falls before the fits, and returns to normal after six hours, unless another fit is soon to occur. The alkalinity enables the blood to carry that much carbon dioxide for excretion.

Subjects of epilepsy crave salt and also acids; hence, we may assume in them a deficiency of sodium chloride. Systemic retention of sodium chloride is a known factor

in the origination of edema—and epileptics show no edema. Calcium favoring coagulation, the rapid clotting of blood in epilepsy lends color to the conclusion that there is present an excess of calcium.

To determine the amount of iodine in the system, Doctor Leonard divided patients into groups and fed them, respectively, thyroid extract, iodine or potassium iodide; within twenty-four hours, all these individuals had convulsions.

Blood drawn from an epileptic during a paroxysm, when injected into an animal, induced convulsions. In the same way, blood from status-epilepticus cases induced fits, but not when sodium chloride had been added to it. On the other hand, when the salted blood was injected during an attack of convulsions thus induced, the latter soon ceased, after a phase of polyuria. In the one case tried, an injection of calcium hydroxide into a cat was followed by convulsive phenomena.

During or within twelve hours after convulsions, the tongue invariably is thickly coated and the breath is foul; and this fact usually enables one to foretell the oncoming spasm.

MacCullom's investigations seem to indicate that calcium metabolism is controlled by the parathyroid bodies. Thyroid-gland administration is followed by increased urinary excretion of chlorides and by leukocytosis. Removal of the thyroid and parathyroid glands occasions an increase of calcium in the nerve-centers. Many epileptics present symptoms like those seen in exophthalmic goiter, such as enlarged throat, rapid pulse, carotid pulsation, tremors, digestive ills, irritability, vasomotor disturbances, cyanosis, and cold extremities. In some cases, a goiter has made its appearance just before the first attack of convulsions.

Upon the basis of these data, Leonard has constructed a theory about the probable causation of an epileptic convulsive fit in certain instances, the elements of which are:

A susceptible person; shock, psychic or somatic; disturbance of thyroid and parathyroid function, as evidenced by derangement of the chloride and the calcium metabolism; irritation of defective cortical cells by calcium; undue elimination of sodium chloride, with corresponding changes in the blood and in the gastric secretions; temporary suspension of the normal antagonism between calcium and sodium elements in the system.

"The treatment should be individualized." In his study of the disease, you see, Doctor Leonard has not lost sight of the patient. We learn:

Table-salt was eliminated from the diet for many months; no benefit resulted; rather, the patients became noisy, restless, quarrelsome, violent. Bromides afforded temporary control, but ultimately the convulsions returned with greater severity; bromide-intoxication finally precipitating the convulsions. An absolute milk-diet supplies too much calcium. Convulsions recur after meals of cabbage, turnips, spinach or rhubarb.

In the end, a diet poor in calcium was given—meat, fish, fruit, and potatoes. The quantity of food was strictly limited to the bodily needs. Plenty of salt was urged. For the stomach and bowels, hydrochloric acid and cascara sagrada were given. Salt enemas were occasionally advised. Hot physiologic salt solution, given rectally, frequently dissipated status epilepticus.

"Under this simple treatment, without any sedatives, the patients appeared brighter, their health improved, they were easier to handle, the spasms becoming less frequent and severe."

That the solution of this problem lay in the study of the metabolic derangement, was evident from the first—or, from the day when Haig announced his discovery of the cessation of uric-acid excretion preceding the outbreak of convulsions.

We may here hazard the suggestion that the clue to the successful treatment of the paroxysms was furnished by the postponement or stopping of the convulsion when the intense vasomotor spasm was unlocked by glonoin and hyosciamine. The salt-abstinence proposal has furnished a valuable extension of knowledge, even though it now seems evident that the measure increases instead of lessening the tendency to convulsions.

No clinician of modern times has attributed to the bromides anything more than a dulling of abnormal impressibility to excitants—an advantage temporary and costly, at best. Whatever benefit really accrues from these debilitating agents can be better won from others that are not open to similar objections—solanine, for example. The use of sedatives that at the same time stimulate the elimination of toxins from the blood is in accord with the most modern and best-developed theories—and works well in clinical application. The substitution of a highly nitrogenized diet for the universal and undiscriminate

vegetarianism prevailing of late marks the return to reason of at least some of us.

Since beriberi and pellagra are curable by a diet of nitrogenous foods, we may now see physicians refrain from the stereotyped "light vegetable diet," and do some thinking before prescribing. Still—we don't know. We would willingly ascribe to men such attributes as are expressed by the words "thought," "reason," "logic," and "common sense," and especially to members of our own profession—but, we are not making claims very stoutly.

In his own life, then, a man is not to expect happiness, only to profit by it gladly when it shall arise; he is on duty here; he knows not how or why, and does not need to know; he knows not for what hire and must not ask. Robert Louis Stevenson.

THE IMPORTANCE OF THE INTERNAL SECRETIONS

Had we as many years of medicine before as we have behind us, we should most assuredly take up as a special topic the study of Sajous' work on the ductless glands and of the literature that is rapidly growing up around it. Doctor Sajous committed his initial error in not being born and reared in Germany—and from this all his subsequent ills flow. Being a mere American, his remarkable work has received the welcome that was to be expected from his jealous compatriots, purblind to aught emanating from a native source.

However, the seed that Sajous sowed has proved too vital to be smothered in the weeds of envy and indifference, and one observes with pleasure how his ideas are growing into our medical literature and, like the hypothesis of evolution, becoming a part of the subconscious belief of the world. Sad to think, though, Sajous will not live to enjoy the recognition so justly due him. A century after he has gone, perhaps, his name will be solemnly embalmed in the annals of medicine—always provided that there be such things as medical annals.

To illustrate the way this matter has entered into the thought and the literature of the medical profession, take this extract from an interesting paper on colon-bacillus infection of the bladder, recently contributed by Robert T. Morris, to *The New York Medical Journal*:

"The question of allergy enters into some of these cases. We may fairly assume that one patient makes more decided response to the influence of the colon-bacillus than does

another patient, because the first one happens to be sensitized. This point must be taken under consideration by therapeutists of tomorrow. Another question to be taken under consideration by therapeutists of tomorrow is the relative resistance of one patient over another in relation to colon-bacillus influence, along lines of natural defense.

"This thought comes to mind because of one of my patients, a girl with nocturnal enuresis, who had colon-bacilli in the bladder, and highly acid urine, believed to be due to their presence. She made no response to treatment aimed at the colon-bacillus, until symptoms of hypothyroidism led to the employment of thyroid extract. Under this treatment, her own resistance was raised sufficiently to dispose of the cystitis and enuresis.

"It may be that a number of cases of nocturnal enuresis supposed to be due to hypothyroidism alone may have colon-bacillus cystitis as a secondary complication."

We have but touched the surface in our studies of the internal secretions. We may look for great progress along these lines, especially as regards the therapeutic application of these studies. Doctor Sajous has been a true prophet.

SUBSTITUTES FOR SALVARSAN—ESPECIALLY SODIUM CACODYLATE

In the treatment of syphilis, in the few years since this arsenical compound was introduced to the profession, arsenobenzol, or salvarsan, has become almost a necessity, at least for syphilologists. While this agent is not now admitted to be the infallible specific which, administered at whatever stage, will cure every case without resort to other medication, it nevertheless has established for itself a position of extreme importance. However, at present salvarsan is not being given alone, but mercury is always used also, either in association or preferably in alternation with it.

True, salvarsan at present is practically out of the market in this country, and, as a consequence, its scarcity has resulted in an enormous increase in price, and—at least in certain sections of the country—unfortunately the market has been flooded with bogus "salvarsans," some of them absolute fakes. Thus, in Chicago, for example, peddlers have sold to druggists and physicians ampules of what *seemed* to be the genuine article. The containers, labels, cartons, and literature of these goods are precisely like those of

directly imported and genuine salvarsan; however, an analysis of the fraudulent article showed that it consisted of nothing but a solution of salt in water. How much of this bogus "salvarsan" has been disposed of no one knows, but the quantity no doubt will turn out to be enormous.

Naturally, and very properly, physicians are beginning to look around for substitutes. The genuine salvarsan now commands such a high price that for the majority of patients its use is practically prohibitive. To meet this unfortunate situation, a group of Philadelphia chemists and physicians have succeeded in producing a substitute, and this is now being offered under the name of "arsenobenzol." This article is not being prepared and sold for profit; while it is said to be giving satisfactory results, it presumably is not identical with salvarsan (although given the same chemical name.) But on this point we are not advised. Of course, American chemists have the original German literature to base upon.

Many medical men are turning again to other arsenical preparations to take the place of salvarsan, the most popular of these being sodium cacodylate, the least toxic of all the arsenicals, being, indeed, much less poisonous and far safer than salvarsan itself.

On another page of this issue there will be found an article, contributed by Dr. L. A. Neiman, of Brooklyn, New York, who briefly reports his experience with this substance and also the manner in which he employs it. Doctor Neiman is in good company, for many physicians whose interest in the cacodylates has been revived by the salvarsan shortage are deriving from this cheaper and less toxic arsenical a satisfaction apparently well nigh as great as that obtained from the more fashionable but also more expensive German salt.

The literature relative to the use of sodium cacodylate in syphilis is very interesting. We lack the space to review it carefully here. It may be stated, however, that it has been very warmly praised by Dr. John B. Murphy, of Chicago, who, in *The Journal of the American Medical Association* for September 24, 1910, writes as follows regarding its use in syphilis:

"One of the striking factors in favor of the claims of this treatment [with sodium cacodylate], is, that the most rapid effect is produced on the external, or visible, lesions. The cures appear to be permanent, as less than half a dozen relapses have been recorded, and most of these were easily traceable to deficient dosage or to improper administra-

tion." Further along in the article Doctor Murphy writes:

"When the system becomes saturated [with the sodium cacodylate], the patient has the typical arsenical breath, with a sense of gastric distress and loss of appetite. I have been giving it in doses of from 1 to 2 grains, hypodermically into the muscles, and it has a most striking effect on the syphilitides, mucous patches, and primary chancre. From the latter, the spirochetes disappear completely in forty-eight hours, the induration is markedly reduced in twenty-four, and it becomes a soft, clean ulcer in seventy-two hours. From that time on, it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same tissue. In other words, the sodium cacodylate seems to destroy the specific microorganism (the spirochete) which is keeping up the irritation. The adenopathies, except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days, and the perforating ulcers of the palate repair in their margins, leaving the perforation in a healthy condition."

Doctor Murphy suggested that the initial dose of sodium cacodylate should be from 1 to 2 grains, depending upon the size and strength of the patient, and should not be repeated before three or four days, unless there are special indications. He has since then somewhat modified his technic, as will be shown later.

Dr. A. J. Caffey, of Milwaukee, reports (*J. A. M. A.*, December 24, 1910, p. 2211) a case of primary chancre of the lip treated with sodium cacodylate according to the method advised by Doctor Murphy. He began with 1-grain doses and secured good results, but the sore would not heal completely. Upon the advice of Doctor Murphy, the dose then was increased to 3 grains daily, and the improvement following was said to be marvelous.

There also were contributed two interesting reports on the use of sodium cacodylate in the treatment of syphilis to *The New York Medical Journal* for April 8, 1911, the first by Dr. O. L. Suggett. The results obtained by this author were less satisfactory than those of Murphy. In some cases, the remedy failed entirely, although in others the beneficial effects were unquestionable. The dosage seems to have been small, and in concluding

his report Doctor Suggett says, "In future, I shall use much larger doses." It will be noted that Doctor Neiman uses 5, 10, and 12 grains at a dose.

Dr. Harry H. Schirrmann, in the same journal, reports the treatment of some 200 cases of syphilis with sodium cacodylate during two years, and he asserts that "results have never been so striking and really wonderful as in those treated with sodium cacodylate."

These reports briefly show a few of the experiences of those who have given this preparation a trial. From Murphy's *Clinics* for August, 1915, we learn that this authority's faith in this substance as a remedy for syphilis is as great as ever. He states that under sodium cacodylate, chancres heal much more speedily, as a rule, than under salvarsan-treatment, and he gives it as his opinion that, in such cases, "sodium cacodylate is the therapeutic agent of the future!" In describing a case of chancre of the tongue (see *Clinics*, August, 1915, page 579) he spoke as follows: "We instituted what we believe to be the best method of treating early syphilis, namely, daily injections of sodium cacodylate. I recently recommended salvarsan, but I have returned to my first love, which I originally suggested and used before we had '606'."

Undoubtedly the tendency is to use larger doses, and, in view of the relative nontoxicity of the drug and its very remarkable safety as compared with other arsenical preparations, there is no reason why physicians should not use it in the dosage recommended by Doctor Neiman (See p. 407), provided they go about the treatment cautiously and also alternate it from time to time with a course of mercurials.

It is interesting to know, in this connection, that Doctor Murphy now begins treatment with a gluteal injection (he does not inject sodium cacodylate intravenously) of 2 grains, to be repeated at the end of a week. If the patient shows no idiosyncrasy for the arsenic salt the dosage is rapidly increased to 5 grains *daily*. The ampules are employed. "We never mix it [sodium cacodylate] ourselves," he adds, "and never let the druggist mix it."

"Nothing is more beautiful," adds Doctor Murphy at another point, "than the healing of a chancre by sodium cacodylate."

The testimony of such a man as Murphy cannot be overlooked, and when he declares unequivocally, that this arsenical preparation is better than salvarsan, the profession is bound to be deeply impressed, particularly

since the price of the former is infinitesimal as compared with that of Ehrlich's arsenobenzol.

Worry, like hate, anger, envy, and all other depressing emotions, is a poison. It is a short circuit which burns out the mental batteries and destroys the power for useful activity. Dr. J. H. Kellogg.

A FALSE DAWN IN MEDICINAL THERAPEUSIS

One of our contemporaries remarks that "in dyspnea, with very labored respiration, opium—or its combined alkaloids—gives better results than does morphine." Now, here, we thought, is a glimmering of sense. The next thing will be the suggestion to try out the twenty-six potent principles contained in opium, in order to ascertain which one of them is the agent that actually combats dyspnea.

But then the thought came: Why should either morphine or opium be given for relieving dyspnea? With very labored respiration? One would think the indication clear—remove any obstacle present that embarrasses respiration or increase the power of the lung and aid it in its "labored" efforts. Does morphine do either? Or can it do more than sedate irritated-nerve action—which hardly is present in such a case as described; or to smother the efforts nature is making to attract attention to a point that needs assistance?

Opium may act better than morphine sometimes, as the former is less sedative, besides possibly containing an excess, relatively, of the stimulant principles, such as thebaine and laudanine. But why take such chances, when we have in strychnine an admirable agent to increase the respiratory power?

The surgeon, ready to make an incision, sees at his hand scalpels, bistouries, straight and curved, sharp and probe-pointed. He does not hesitate to choose the one best fitted for the duty before him; he does not in dubitation gather up the whole bunch and seek to cut with all, rather than exercise his cerebration in making a selection of the fittest. Yet, that is exactly what we have been doing with our drugs—and our results deserve most of the derision they receive.

The greatest drawback to rational medicine today is the prescription. It is a relic of the medieval period of therapeutics, when doubt proceeded from ignorance and led to rashness. The commingled mass of drugs shot into the patient may or may not be followed by improvement; and we know not

whether any one or all the drugs were beneficial or were not. What folly—what insane stupidity!

Do not blame the advertising manufacturing chemists. True, they seek to reap a profit by mixing a lot of stuff, and telling us it is good for whatever ails our patients. But, is it not our own fault that we "fall for" such gulf? If we do not know any better, then, pray, who does?

Here is an abnormal condition, a disorder of the function of respiration—dyspnea in which there is very labored respiration. What causes it, and can the cause be removed? What directly relieves the condition, aids the laboring organ, restores order? Aspidospermine? Then give it; give enough to counterbalance exactly the disease-agency and restore physiologic balance. Does aspidospermine fail? Then the diagnosis was incorrect, and the case must be gone over more carefully. We may find a cherry-stone in the bronchi—then what folly to medicate? We may find a spasmody element in which case some antispasmodic agent is indicated: glonoin, for quick action; atropine, to increase and prolong the former's action; strychnine, to augment the systemic reaction toward the drugs, through increasing the irritability of the nervous centers. Here you have a logical prescription, one in which the action of each ingredient is known; and, while we do give three, each one serves a distinct, definite purpose.

But, if the man who prescribes opium is ready to defend his procedure, let him tell us just what action he expects to get from his morphine, codeine, narceine, thebaine, laudanine, papaverine, narcotine, cryptopine, or whatever the principle; also, their inter-reactions on each other, and how he recognizes the effect of each.

A good deal of the trouble of this world arises from the fact that some folks like to have gardens, while others prefer to keep hens.—Nixon Waterman.

THE WORK OF THE ARMY MEDICAL OFFICER

The army medical officer has two principal reasons for his official existence, the first being to keep the soldiers of his unit in good health and ready for any call; the second, to assist his commanding line-officer, in time of actual warfare, to reach the goal of the soldier, which is victory. All other purposes are subsidiary to these. The presence of the medical officer at the front assures a better morale among the soldiers in time of battle.

They can and will fight better when they know that there is at hand a body of trained men whose sole duty it is to look after their bodily welfare, and, during the actual contest, to search the field, find and care for the wounded, and take them from the peril and turmoil of the front back to the hospitals at the base.

Especially as regards efficiency at the firing-line has it been found better to train men for this particular work than to have the fighting soldier turn from his duty, responding in part to his own sense of danger, in part to his sympathy for a wounded friend, in order to assist the latter to make his way to the rear. What can an officer say when he finds a soldier carrying his own gun and assisting a wounded companion out of the danger zone. If he has the soldier's stern sense of duty, he will order the unwounded man to abandon his friend and return at once to the fighting line; but his sympathy is bound to be with the wounded soldier, this tending to make him perilously lenient.

The officer of the line has learned by the experience of many campaigns that it is greatly to his advantage to have a regularly organized unit of medical soldiers, whose definite duty it is to clear the front of the impediments caused by the presence of the sick, wounded, and dying. Aside from the humanitarian aspects of the work of these men, he knows that it is economically profitable to be able to locate the injured quickly, repair their wounds with the least possible delay, and return them to the front as soon as they are well enough to go.

The most expensive thing in an army is the trained soldier, and if each medical officer succeeds in saving to the army only five such men every year, he will more than have earned his average salary, since it costs more than one thousand dollars to convert a raw recruit into a trained soldier, and one such trained man is worth many raw recruits. To fail to provide medical officers in sufficient number to care for the bodies of the men of the army is as wasteful as it would be to buy an automobile, and for lack of skilled assistance be compelled to buy a new machine every time a tire bursts.

A few months ago (to be exact, in August, 1915), very severe criticism was made in the French Chamber of Deputies of the mismanagement of the army medical department in France. Early in 1914, prior to the war, the socalled Lachaud report to this chamber, made by its sanitary committee, showed that the medical work of this army was in a very

unsatisfactory condition, and an effort was made to correct this. Unfortunately, just at this time, the war came on and nothing was done. All this trouble was undoubtedly due to the fact that, anticipating the breaking out of the war, some 95,000 men were called to the colors for whom no corresponding medical provision was made. The direct result was a decided increase in the morbidity and mortality in the French service.

This problem was recognized, and in December, 1914, the so-called Frecey net committee was appointed by the president of the French republic. Reports were made in March and April, but these were not given publicity until October, 1915. These reports showed that from a sanitary point of view the French medical service was very unsatisfactory. There are reasons to believe that the exposures made during the acrimonious debate of July, August, and September, 1915, were, to some degree at least, the cause of the fall of the French ministry in the fall of 1915.

The importance of adequate medical attention has been fully appreciated, likewise, by the British government, which has experienced great difficulty in securing medical officers enough to man its rapidly developing army, and it has only succeeded in doing so by stripping large parts of the civilian population of their medical men.

The Surgeon-General of the United States Army, in his last report, asked for an increase of personnel sufficient to provide seven medical officers for each 1000 enlisted men. He has shown Congress that at the present time he actually employs a percentage of medical men amounting to 6.8 percent for each 1000 enlisted officers, and he has made it clear that he is decidedly short of medical officers. It is well known that in addition to the regular, active medical personnel a considerable number of officers of the Medical Reserve Corps are constantly employed to check out the actual requirements even in time of peace. It may be imagined how great would be the handicap should any large body of troops be called into active service.

Every physician in the United States should interest himself in the medical needs of our army. This army is to be increased—just how much we do not know; but, whatever its size, the medical profession of America should insist that adequate provision be made to care for our soldiers not only in times of peace, but also as a part of the general program of preparedness for any possible war.

The eye and mind of the layman are naturally enough fixed primarily upon an effective fighting force, but the people should not be allowed to forget that back of that force and absolutely necessary for its efficiency, for its comfort, and for its repair and renewal in time of war, there is a quiet, well-educated, highly efficient body of men, whose names do not appear "in the dispatches" as the winners of victory, but who, nevertheless, contribute more to the achievement of victory than do the majority of men who lead companies, regiments, divisions and armies into action, and who, therefore, get the opportunity to pass as heroes.

There can be no question that many crimes, multitudes of suicides, great numbers of divorces and other social calamities may be rightfully regarded as among the natural results of neurasthenic conditions. Probably more than one poor fellow has been sent to the gallows by a judge who was suffering from a fit of neurasthenia. Wars have been declared and rivers of blood have flowed to satisfy the whims of neurasthenic kings and queens.—Dr. J. H. Kellogg, in "Neurasthenia."

RELIGIOUS PROSTITUTION OF OLD

Lee Alexander Stone contributes to *The Urologic and Cutaneous Review* a paper entitled "The Prostitute: An Ethnological Study." In this essay Doctor Stone describes the custom, that prevailed in Babylon, Lydia, Syria, Greece, Egypt, Carthage, and to some extent in Rome, of women serving as public prostitutes at the temples, as a religious duty. This custom Doctor Stone attributes to the desire of the priests to remedy the evils resulting from endogamy, or intermarriages limited to the clan or tribe. Seeing the degeneracy springing from such intermarriages, the custom of temple-prostitution arose, in order that the unions with strangers might revivify the failing gens.

This explanation will scarcely stand in the light of history. It is not at all likely that any such knowledge was possessed by the priesthood of any land in those days. The close limitation of political privileges to those born of free parents of pure blood was too general; as in Greece, where the admission of outlanders to citizenship was an event rare enough to be notable, and only exercised on such occasions as that of the refugees from Platæa after the destruction of their own city.

The unanswerable objection, however, is the fact that it was not girls alone who were thus utilized at the temples, but boys as well—pederasty being common then as now in the Orient, that is, Asia Minor and its neigh-

boring lands. But this could hardly have been for the purpose of improving the breed by crossing, nor for any but the simple and obvious reason, namely, for the benefit of the priesthood. These boys were known as kadesh or kadosh—consecrated—and we always are overcome by a queer sensation when we see some lodge or association taking the name of Kadesh. We once asked a member of one such what was the meaning of the name, and he replied, "Consecrated"; but, to what, he knew not. Just as well.

The true reason for this custom of religious prostitution was merely that the priests of Astarte, or Ishtar, at Mylitta, knew that in no other manner could they as readily attract to their temples as certain and generous an income as by providing for the sexual wants of strangers. That, on the part of the women, it was a religious duty, a sacrifice to the gods, commanded it to their sex the more, for women are ever ready to respond to the call of their faith. Nor was it deemed objectionable to the men, who willingly permitted that sacrifice and did not consider it degrading.

We must not make the mistake of assuming that people living in those faraway times possessed the same thoughts, ideas, beliefs, and prejudices as we do at this late day. Even now, it is only in America that the honor of woman is looked upon as so precious a thing that its forcible violation is punished by death, immediate and without trial. Elsewhere, even in the most cultured communities of Europe, men are disposed to look more philosophically upon such occurrences.

Priestly greed was the only reason for the introduction of this custom. The degeneracy from inbreeding is but a question of our day and of the most modern observation. Egypt, whose civilization was the parent of most of the oriental religions, whose influence is manifest in Judaism as it is in Christianity, maintained for forty or possibly sixty centuries the custom of marrying her rulers to their sisters. Her dynasties did not require renewal more often than in other countries and ages; and so solicitous were her sages to preserve the royal blood, that a successful usurper immediately took steps to legitimize his race by marrying a female of the previous dynasty and making her sons his heirs.

We can not agree with Doctor Stone in crediting the priests of Mylitta with any such biologic wisdom as he implies, or with more than a very accurate knowledge of humanity; but they were possessed of excellent financial acumen. It is not without

reason that the temples of paganism are the only memorials of the life of their peoples, that were so massively built as to defy the ravages of time, and man, and the elements. The homes of the subjects and the palaces of their kings, the warehouses of the merchants and the vessels of the mariners have fallen to dust; the revenues of the priests alone were sufficient to erect such enduring memorials.

When you come to Chicago for that long-planned postgraduate course, remember that our latchstring is out. Make the pilgrimage to Ravenswood.

PRACTICAL POINTERS FOR MAY

A hypodermic dose of apomorphine usually diagnoses and cures the convulsions of children not due to fever.

Summer is coming with its colics and diarrheas. Don't these words suggest the sulphocarbolates—and the infants' anodynes?

To soften impacted ear wax, a solution of sodium bicarbonate in warm water (about 100 to 110° F.) acts very nicely in most cases. Use the ear syringe.

Some forms of dysmenorrhea, according to Novak, are relieved by sodium citrate, which it is claimed reduces the viscosity of the blood and alleviates the pain of expulsion.

Precordial pains always demand close investigation. Relieve these pains with glo-noin or atropine, or, better still, by both, the first being given to produce quick action, the latter to prolong it.

Atropine is the indicated remedy in spasmodic dysmenorrhea. Give 1-100 grain two or three times a day, beginning two or three days before the period and continuing until the flow is well established.

Gray declares that measles is most contagious at the time of the appearance of the rash, but may be transmitted as early as five days before this time. Its transmissibility does not extend beyond seven days following the skin eruption.

After experimenting extensively on cats, Martha Wollstein reaches the conclusion that mumps is probably due to a filterable virus. Whether this virus contains a microorganism or not has not been ascertained. See *Journal of Experimental Medicine* for March.

Obstructive dysmenorrhea—in which pain ceases as soon as the flow is well established—is relieved, according to F. B. Block (*American Journal of Obstetrics*) by the insertion of a stem pessary, or by any other means indicated for the removal of the obstruction.

Ellingwood says that in the amenorrhea of young girls, and in that form induced by

exposure to cold, he obtains excellent results from the use of polygonum (water-pepper). Ten to twenty drops of the specific tincture are administered every two to three hours in hot water.

Bacterin treatment is being used with good success in the treatment of sciatica. Search for some point of focal infection. Occasionally it will be found in an infected bladder or an inflamed prostate. Zapffe cured a case with a bacterin made from staphylococci and a diphtheroid bacillus found in the urine.

Cruz reports a case of rheumatic iritis recurring every winter for twelve years in a man 35 years old, and which resisted anti-rheumatic remedies and local applications. This case yielded readily and permanently to the internal use of aconitine. (Reported in *Revista de Medicina y Cirugia Practicas* for January 7, 1916.)

In treating severe and extensive burns, try immersion of your patient in a bath containing 1-8 to 1-4 pound of sodium bicarbonate. The temperature of the bath should be raised for subnormal temperature and shock, or lowered for pyrexia. This treatment, declares Herrick, in *The New York Medical Journal*, is unequalled.

The "rheumatics" will drop in on you this month. Are you ready for them? Much can be done for their relief. Examine the teeth, the tonsils, the prostate, and the alimentary canal; give bacterins that "fit"—the streptococcus is usually the trouble-maker; and do not forget the alkaline-eliminative treatment for the associated acidemia.

Do you know that there is a test by which it is possible to determine a person's immunity to diphtheria, and that about 80 percent are naturally immune? This is the so-called Schick reaction, obtained by injecting a small amount of carefully diluted diphtheria toxin under the skin. Eventually this test will be applied to every person exposed to diphtheria. Why not now?

Have you a troublesome case of urticaria? Remember that it is now believed that this condition is due to proteid decomposition and the formation of the toxic histidin by-product, betainimidazolethylamin. Put your patient on a vegetable diet for two weeks, purge daily with a saline laxative, and if the disease shows a tendency to persist, try small doses of pilocarpine.

A variety of bacteria may cause summer diarrhea in children: for instance, the dysentery (Shiga-Flexner) bacillus, the gas bacillus, streptococcus, bacillus proteus, and the ba-

cillus capsulatus. Whatever the cause, lactic-acid treatment seems to be effective. This is especially true if the gas bacillus is present, as is practically always the case in bottle-fed babies. Order tablets containing the bacillus bulgaricus.

Richardson (*Boston Medical and Surgical Journal*, Dec. 23, 1915) believes that it is a pernicious custom to give castor oil to clean out the intestinal tract prior to surgical operation. The castor oil is not only an intestinal irritant, but it tends to produce postoperative intestinal stasis, facilitating gas accumulation. Doctor Richardson believes it more rational to give a saline cathartic or Russian oil, followed by a cleansing enema.

A diagnosis of pregnancy may now be made by an examination of the urine, according to a method devised by Kiutsi and Malone. The technic has been improved by Knerr (*Jour. Mo. State Med. Assn.*, March, 1916). In this test the urine is examined according to the Abderhalden method to determine the presence or absence of placental enzymes. Knerr declares that he examined 200 urines by this method, with practically no failures. Others have not been so successful.

A southern physician wants "the best remedy for pellagra." There is no "best," but we suggest the following: Goldberger's high protein and corn-restricted diet; hypodermic injections of sodium cacodylate every two to seven days; bowel regulation with petroleum-emulsion—a delightful emollient; intestinal antisepsis by means of the sulpho-carbolates; picric-acid solution, 1-2 to 1 percent, applied to the eruption and used as a gargle; saturation with calcium sulphide; and quinine hydrobromide for its tonic effect. Don't try to give every patient all these remedies at the same time!

Salvarsan and mercury are used in association by the best men in the treatment of syphilis. First, a generous injection of the "606," with mercury following; then a second dose of salvarsan after a week or ten days, and more mercury; then a third dose of the arsenic in about a fortnight—and still more mercury. Mercury bichloride or proto-iodide may be given by the mouth at first, but intramuscular injections of mercury salicylate (which may be made nearly painless by combining with novocain) are more popular for later administration. This mercurial may be administered at weekly intervals for five or six months or longer. Tertiary and parasyphilitic cases require iodine saturation—calx iodata.

Leading Articles

The Injection Treatment of Hemorrhoids*

By ARTHUR S. MORLEY, F. R. C. S., London, England

Temporary Assistant Surgeon to St. Mark's Hospital for Cancer, Fistulae and Other Diseases of the Rectum

INTEREST in this valuable method of treating internal hemorrhoids was reawakened about a year ago by an article by Sir James Goodhart,¹ in which the advantages of this treatment were extolled and a lurid (not to say biased) glare was thrown upon the evils of the more radical operative treatment, stress being laid upon the occasional failure of the latter. A subsequent series of articles² by various rectal surgeons served to put the advantages and disadvantages of the two methods of treatment into a truer perspective.

In spite of the prominence given to the subject in this way, I find that the majority of medical practitioners are still ignorant of the fact that there is such a thing as the treatment of piles by injection; that the general belief is that the mild cases of piles are to be treated palliatively by local applications, laxatives, diet, and the like; and that when a patient's life is made a misery to him in spite of this treatment the only thing left for him is operation—a proceeding of which the average patient has a quite disproportionate horror.

Since I have had the advantage of acting as surgeon to out-patients at St. Mark's Hospital at the beginning of the war, a very large number of cases of hemorrhoids of all degrees of severity have passed through my hands. At first I practiced injection only on what may be described as medium cases, in which there was very moderate and occasional bleeding, slight prolapse which was spontaneously reducible, slight pain during defecation, and the like.

The number of beds at the hospital is very limited, and the war has caused increased pressure upon them; the result was that the list of hemorrhoid-cases awaiting admission was of considerable size, and many cases that I had considered needed operation were wait-

ing, sometimes, months for a bed, and were suffering from perhaps moderately severe hemorrhage week after week or from other troublesome symptoms which ordinary "palliative" treatment failed completely to relieve.

Advantages of the Injection-Cure

I was led by this to try the injection-treatment on more severe cases, and found that in an enormous majority of them all symptoms ceased like magic after a few injections, although in the more severe cases the piles were still seen on examination with the sphincteroscope. Still more surprised was I to find that in very many cases, which I had previously thought obviously needed radical operation, not only did the symptoms disappear, but no trace of the piles could be found on even the most careful visual and digital examination.

Thus it happens that for a very considerable time I have been treating a large number of cases by injection, and have been extremely pleased with the results; and so have the patients, especially those who had come to the hospital for admission and operation after months or years of palliative treatment of other kinds.

The treatment, however, is by no means a new one, and I claim not the slightest degree of originality for it. It was first brought to the notice of surgeons in this country [England] by Mr. Swinford Edwards in 1888, but though it has been employed by him and by a few other rectal specialists since that time it has never become very generally known either by the rest of the profession or by the public.

The little operation requires a considerable degree of practice to perform properly; the cases need a certain amount of selection (indeed, a very great degree of discrimination must be employed if one is going to promise a long degree of immunity to the patients); it also needs a few special instruments, and above all, a very good light. With these

*Reprinted from *The Lancet*, March 18, 1916.

¹Practitioner, December, 1914.

²Ibid., March, 1915.

reservations, it is a treatment that would well repay surgeons, and even general practitioners, for a careful study.

The obvious advantages of the treatment are: (1) that the patient need not lie up for more than at most twenty-four hours; (2) that there is no need either for general or local anesthesia, since the treatment is practically painless, if properly performed; (3) that it can be made quite inexpensive, so much so that it may be brought within the reach of even a quite poor patient who could not face the expense of an operation in private; (4) that it is a perfectly safe procedure in patients, such as the very aged, pregnant women, and others, who for some reason cannot take an anesthetic safely, such as persons with dangerous heart or lung diseases; (5) that there is no after-pain; and (6) that it is, so far as I have seen after employing it in a very large number of cases, invariably harmless.

Circumspection Invariably Is Indicated

The treatment is not suited to cases of strangulated or irreducible hemorrhoids, nor to cases in which there are other complicating conditions, such as old-standing fissures, fistulae, ulcers, and the like.

In this connection, I would remind my readers that the presence of obvious piles by no means contraindicates the presence of other rectal lesions, and that a full and complete examination must be made in every case before concluding that all the symptoms are due to the piles. During my absence from the hospital on one occasion, the then house surgeon, who had become a rather enthusiastic advocate of the treatment, injected some piles in a man aged forty-five. When I saw the man the following week, his main complaint was that in spite of the treatment the diarrhea from which he had suffered had not diminished, though the hemorrhoids no longer prolapsed and the bleeding was less. The history of diarrhea aroused my suspicions, and on making an examination with the sigmoidoscope I found a large mass of carcinoma high up in the bowel. The injection of the piles had done no harm, but the real nature of the case had been overlooked.

Another class of cases in which the treatment cannot be expected to cure is that in which the hemorrhoids have become partly polypoid and fibrous from previous attacks of thrombosis. In such cases, one is dealing, really, with a solid growth, and it is unreasonable to expect that injection of carbolic acid will bring about the disappearance of fibrous tissue. But even in these cases it may cause

the bleeding to cease and relieve the patient of a large part of his trouble while awaiting the operative treatment that is indicated.

As to Recurrence of the Piles

Now as to the question of recurrence after the treatment, I confess I have not practiced the treatment for a sufficient time to give a firsthand opinion of any value on this point. But I have watched a considerable number of cases for well over a year and know of only two cases in which there has been the smallest return of troublesome symptoms. In those two cases, the patients returned, asking me to reinject their hemorrhoids, scouting the idea of operation, provided there were any prospect of going another six or twelve months without further troubles, even if the injection had to be repeated a third time after that interval.

Other surgeons who have had a larger and more prolonged experience with the treatment than I myself have told me that in the vast majority of suitable cases it is safe to promise the patient that he will be free from symptoms for at least three years; that, if he has a recurrence after that time, the treatment may be repeated and another three years' immunity from symptoms obtained. And mark well that in the intervals no further troublesome treatment with ointments, lotions, suppositories or what not is required. And this is a very great point, because all these other forms of palliative treatment are messy and troublesome. The only adjuvant treatment that is necessary is the use of some mild laxative—in fact, to warn the patient against the evils of constipation.

The Technical Phase

The treatment consists in the injection into each internal pile of a few drops of carbolic acid and glycerin. The solution I employ, and which I find by far the best, is:

| | |
|-----------------------------|---------|
| Acidi carbolicici | grs. 48 |
| Glycerini | drs. 2 |
| Aqua destillata | drs. 2 |

This is a 20-percent solution of carbolic acid. I find that the amount which should be injected into each pile varies from 2 to 6 minims of this solution.

Great care must be taken not to inject too much, otherwise it is possible to produce slight sloughing; which is not a serious matter in itself, but it causes decided pain and thus removes one of the great advantages of the whole proceeding. It is far better to inject too little than too much, because in the former case the injection can easily be repeated if necessary.

My practice is to inject all the piles at one sitting whenever it is possible to do so. Sometimes this is not practicable, because after injection a large pile sometimes swells so rapidly that the smaller piles are completely hidden for the time.

I find it easiest and best in every way to perform the injection through a large speculum. The one that is most suitable is Kelly's sphincteroscope, as illustrated in Figure 1.



Fig. 1. Kelly's Sphincteroscope.

Through this instrument, the piles may be brought well into view, and even quite small ones may be seen—piles which could never be extruded and injected outside the anus.

The other needful appliance is a suitable syringe. This should be one of such length and diameter that it can easily be used through the speculum. It should have a fairly wide-bore needle, about 3-8 inch long, fitted into an elbow-shaped socket. The shape of the socket is important, because if a straight one were used it would be difficult or impossible to see where the point of the needle was being inserted.

The syringe should be provided with the usual milled screw on the piston-rod, so that the correct quantity of the fluid may be measured off and injected. The syringe shown in Figure 2 is the one which I find most useful. It is known as Dawson's dental syringe, but the needles have to be specially made. It is provided with two rings at its base, to act as finger-grips. The syringe is made entirely of metal, and is, therefore, readily sterilized.

The only other essential is a really good light. I find either the ordinary forehead-lamp or a good standard laryngoscope-lamp equally suitable.

How to Make the Injection

The patient's bowel should have been cleared out previously by an enema, if

necessary. The patient may be placed either in the knee-elbow position or on the left side, with a firm sandbag or cushion under the hip. I usually employ the former posture for men and the latter for women; but, on the whole, the knee-elbow position is preferable, because the lateral position

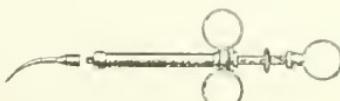


Fig. 2. Dawson's Dental Syringe

necessitates an assistant to hold the right buttock out of the way in stout females.

The speculum is then passed. It should be very liberally greased with vaseline and passed with all gentleness; if this be done, it should cause no pain; but if it is not properly lubricated or is passed roughly pain will be caused, and a nervous patient may afterward describe the operation as anything but as painless as had been promised. The speculum should be passed at once to its full length and the obturator withdrawn.

The interior of the rectum being then visible, the speculum is slowly withdrawn for about an inch at a time, and then gently pressed in again for half an inch. In this way, when it has been withdrawn gradually down to the level of the hemorrhoids, they will prolapse into the lumen of the speculum.

The appearance presented will then be much as is shown in Figure 3, the lightly shaded areas being diagrammatical representations of the piles in the positions in which they are usually found.

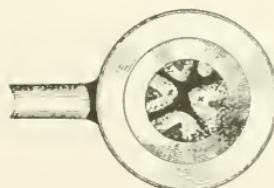


Fig. 3. Showing where needle should be inserted.

The dark pyramidal areas in front of each are the little anal valves, immediately above which the hemorrhoids lie. These valves are important landmarks, and the needle should never be entered below them, or it will be encroaching dangerously on the mucocutaneous junction. The greatest care must be taken to avoid this error, because, if the injection is made too close to the skin, it

will produce a very decided amount of swelling and inflammation and, consequently, of pain.

Before making the injection, the piles may be sponged over with a little weak biniodide of mercury or a 1 : 50 lysol solution, which should be at once mopped up with a dry swab, to prevent risk of absorption. It is a good plan also to touch each pile, at the spot where it is intended to inject it, with a drop of pure [full-strength] carbolic acid. This renders any chance of introducing infection from the mucous membrane negligible (I have never heard of infection occurring even where this precaution is not adopted), and also renders the point anesthetic, so that even the needle prick is not perceived.

The needle may now be inserted through the carbolized spot. The surgeon should endeavor to enter the needle in the spot indicated on the two lateral piles by a cross in the diagram (Fig. 3). It should be pushed up along the long axis of the pile to near its base; usually this means entering the needle to the shoulder of the shaft, that is, to its full length. The lowest pile should always be injected first, so that any bleeding which may occur shall not obscure the other piles. The solution is then slowly injected in the quantity deemed advisable.

The needle is not withdrawn at once, but should be allowed to remain in position for some thirty seconds, until the pile has commenced to swell and has become blanched. If this precaution is omitted, there will be a good deal of bleeding as it is withdrawn and the bulk of the carbolic solution will be washed away by the blood.

If any of the piles are of large size, it is well to make a second injection into the base of the pile, by entering the needle in the transverse axis of the pile and injecting 2 or 3 drops of the carbolic solution as nearly as possible into the center of the base of the pile. Each pile is treated in turn in the same way.

Finally, the blood is mopped away with a sterile swab, and the "operation" is complete. The whole proceeding does not take more than two or three minutes to carry out.

The After-Treatment

The patient should be warned that the piles will swell up, and are likely to prolapse, at first, more than before. It is of the greatest importance that they should not be allowed to remain down, but that they be at once gently reduced, otherwise there is a risk of their becoming strangulated and sloughing. The patient should be instructed,

therefore, to keep quiet, if possible in bed, for the first twelve to twenty-four hours, and to wash the piles at once with cold water, should they prolapse, and then to grease them well with vaseline or some simple ointment and gently press them back. This is the only after-treatment required, excepting that some simple laxative, such as confection of senna and sulphur, is advisable.

For working-men or those with important business to attend to, it is not absolutely necessary to lie up at all, and, if the injection is made in the evening, the patient may quite safely go to work or business on the following day—but he then should be told not to take unnecessarily strenuous exercise.

After five to seven days, the piles which have been injected will have shrunk markedly and eventually will be converted into mere fibrous ridges, which may be felt on digital examination. If sufficient carbolic acid has not been used, this process will not be complete, and a second injection may be made after the expiration of from four to seven days. Where the piles are large, I have found that as many as four or five injections at weekly intervals may be required, but as a rule two or three are sufficient.

Some Incidental Points

Frequently, after the piles which have been injected first have shrunk, other smaller piles, which were concealed before, come into view, and these should be injected also before the patient is dismissed.

In practically every case, the bleeding of which the patient has been previously complaining is stopped from the very first, and in most cases the prolapse also disappears within two days of the first injection. As one patient put it to me recently, "I feel a hundred percent better."

In quite numerous cases of inveterate pruritus, I have found a few small hemorrhoids on careful examination with the speculum, and after these have been injected the pruritus has disappeared—apparently for good. I believe, therefore, that this little point might be borne in mind: that the injection of any piles that are present be tried before even contemplating the recommendation of any of the more severe operations for pruritus (such as Ball's operation), which, I believe, are often resorted to before a real attempt has been made to ascertain and remove the cause of the pruritus.

A Warning

Lockhart Mummery has recorded a case in which he unwittingly injected some hemor-

rroids in a *hemophiliac*, with the result that rather dangerous hemorrhage occurred. This experience must be almost unique, but the possibility of such a misfortune should be remembered. With this sole exception, I know of no case in which the injection of

piles has given rise to any dangerous complications; and, while I do not by any means go as far as Sir James Goodhart, I certainly do think that injection might be employed far more frequently, and operation less frequently, than is at present customary.

Vaccine- and Serum-Therapy in Everyday Practice

IV. Autogenous and Stock Bacterins; Combined Bacterins

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from page 35, April issue.]

FIRST of all, in order to avoid confusion, let us define our terms, viz.:

An *autogenous bacterin* is one prepared from the particular strain of bacteria isolated from the lesions of the individual in whose case the resulting bacterin is to be employed.

A *stock bacterin*, on the other hand, is one made from bacteria of the same species as those causing the infection against which the bacterin is aimed, but obtained from a source or sources other than the lesions of the patient to be treated.

Theoretically, the freshly prepared *autogenous* bacterin should be the ideal one; however, in actual practice, this is not always so, and this for various reasons.

First of all, it is often difficult, or even impossible, to secure cultures of the specific microorganism responsible for the pathologic condition to be treated.

Secondly, while waiting for an autogenous bacterin to be prepared, extremely valuable time is lost, especially in acute infections—the very diseases in which bacterin-therapy is likely to do the most good. Very often time is the vital factor, and death or irreparable damage may result while one is waiting for the autogenous bacterin.

Practical Advantages of Stock Bacterins

One of the great advantages of using *stock* bacterins in acute infectious conditions, such as tonsillitis, pneumonia, grip, scarlatina, arthritis, is that, because of the availability for prompt administration of the preparations kept ready-made on hand, complications and sequelæ become relatively rare; whereas, if one is compelled to wait for the preparation of an autogenous bacterin, irremediable damage may already have been done before the bacterin becomes at all available.

The longer I practice medicine, the more I am surprised at the number of permanently crippled hearts, kidneys, middle-ears, and joints coming under my observation too late to be benefited appreciably by any form of treatment. And it is my experience that most of these sad conditions are attributable to failure or delay in applying specific treatment for the acute conditions just referred to. During the five years or more in which I have been employing the bacterins almost daily in these acute conditions, complications and sequelæ have reached to near the vanishing-point. It is for this reason, as much as for any other, that I tell all my patients that I use the bacterins in acute infectious processes, as I am doing.

Furthermore—despite the oft-repeated *ex cathedra* statement, that “pneumonia is a self-limited disease, running a definite course, not favorably influenced by any known method of treatment”—if you persistently employ stock bacterins (and of course in connection with the proper active-principle medication) *early* in the course of all those cases exhibiting all the clinical (and bacteriological) signs of a beginning pneumonia, you will have the satisfaction of seeing many, if not most of them, “aborted” or “jugulated” within a surprisingly short period of time. True, you will quite likely find it a hard task to convince the scoffers at the employment of stock bacterins that these really had been cases of true pneumonia, because you did not allow the disease to run long enough to develop all the classical symptoms; but, would they not have been *typical* cases of pneumonia had you not interfered?

After one has employed this line of treatment for a few years, he will certainly find that the number of “typical cases” of pneumonia occurring in his own practice has

greatly diminished. *In honest trial will not fail to be convincing.*

Again, in infections, the bacteriologic picture is constantly changing, and new factors may enter into the case before an autogenous bacterin is ready. It is a fact well known to bacteriologists that, when once a given variety of pathogenic bacteria gains entrance into the body in sufficient numbers to break down the resistance to the infection, the door is opened to a veritable horde of other invaders, so that not infrequently the original offenders will quickly become outnumbered. It then becomes a difficult task to decide which is the real causative agent.

The preparation of bacterins requires special training and also many kinds of particular laboratory paraphernalia. With neither of these essentials is the average practitioner of medicine equipped; consequently, he must depend upon the services of some dependable laboratory for his autogenous bacterins; and such a laboratory is quite likely to be too far away to permit of quick service. So, the man in general practice must perforce fall back upon stock bacterins, a sufficiently varied assortment of which he can keep on hand at all times to meet the great majority of acute infectious processes encountered.

Another item worthy of consideration is, that the cost of autogenous bacterins is such as frequently to make their use prohibitive; whereas, the cost of a dose of a stock bacterin compares favorably with that of dependable drugs.

In many (perhaps in most) cases, the clinical picture is so clear that a properly selected polyvalent stock bacterin is plainly indicated, and here a carefully made stock bacterin, if from a reliable laboratory, is undoubtedly likely to do as well as, or even better than, an autogenous one hurriedly prepared on short notice.

Professor Madden, of the Egyptian Government School of Medicine (*London Lancet*, Aug. 7, 1915), writes as follows:

"In certain conditions, particularly in septic conditions and lobar pneumonia, stock vaccines may be used. We are here dealing with conditions of known and definite bacteriology; and, as stock vaccines are prepared from many different strains, one is almost sure to have among them that particular variety (strain) of the organism present in the lesion under treatment, and thus we secure the curative effect of its special vaccine. . . . In cases of indefinite etiology, an autogenous vaccine is to be preferred, as

in its preparation the true causal organism or group of organisms is isolated and grown, and a more potent and direct vaccine made available."

Hillman and Duncan (*N. Y. Med. Jour.*, June 27, 1908) declare that "in the majority of cases, stock vaccines are just as efficient as autogenous vaccines."

Cole and Meakins (*Bull. Johns Hopkins Hosp.*, June-July, 1907), in referring to their use of stock gonococcic bacterin, write:

"It has been held by some writers that certain strains of the gonococci are endowed with special powers in the production of opsonic immunity. Our experience has been quite to the contrary. The vaccines used by us were prepared from four different strains of gonococci. In comparing the results obtained, no distinct difference could be demonstrated in the clinical results or the effects on the opsonic index when the patient was vaccinated with a vaccine made from his or her own organism or when a different vaccine was used."

Hamilton and Cooke (*Jour. of Infect. Dis.*, Mar. 30, 1908) say: "Better results are obtained by the use of strains which have been grown for a long period on artificial media than by the use of freshly isolated strains, and there appears to be no advantage in using the patient's own organism." These writers have treated a large number of cases of gonorrhreal vulvovaginitis of children with gonococcic bacterins.

Hartwell and Lee (*Boston Med. & Surg. Jour.*, Oct. 17, 1907) have used, with success, stock staphylococccic bacterins, at the Massachusetts General Hospital, in the treatment of furunculosis, carbuncle, and septic wounds, and they say: "We have found that it is not necessary to prepare an autogenous vaccine, but that these cases do equally well when treated with a stock staphylococcus-aureus vaccine."

Another writer declares as follows: "Stock vaccines have been found equal and sometimes superior to autogenous vaccines in the treatment of infections due to staphylococci, the gonococcus, and to the tubercle-bacillus, and for the prevention and treatment of typhoid fever; they are also useful in the treatment of many infections caused by the colon-bacillus, the streptococcus and the pneumococcus."

Some authorities who advocate the use of stock bacterins point out the fact that immunity against smallpox is produced by stock vaccines; also that tuberculins are

stock bacterins; yet, no one questions their efficacy.

The splendid results of Trudeau, Baldwin, Lawrason Brown, and others in treating tuberculosis with "tuberculin R" and "bacillen-emulsion" (stock bacterins), without taking the opsonic index, amply testify to the value of stock tuberculin, and also go to prove that the opsonic index is not essential to successful bacterin-therapy.

Why Failures?

Failure of autogenous bacterins to produce satisfactory results is no doubt often due to the fact that they are used as a last resort, owing to the difficulty or unavoidable delay in their preparation.

In chronic infections, when a patient has harbored a given germ for a long time, it appears that a mutual tolerance develops between the bacteria and the tissue-cells. The germs adapt themselves to their environment, modifying their characteristic qualities, the better to resist the attacks of the antibodies produced by their host's immunizing mechanism; and the tissue-cells also adapt themselves to the invading bacteria.

In such a case, an autobacterin is liable to evoke little or no immunizing response (antibody production); the system has become so habituated to and tolerant of this particular strain of bacteria that the autobacterin fails adequately to stimulate the immunizing mechanism. When a stock bacterin prepared from a vigorous, typical strain or strains of the disease-producing microorganism is employed, a powerful impulse to immunoproduction is given, with corresponding curative effect.

As a result of these studies, then, we decide that the advantages of stock bacterins greatly outweigh those of the autogenous variety, and that, in the great majority of cases, satisfactory results follow the employment of the stock preparations. In any case, it is well to begin treatment with a reliable stock bacterin, of polyvalent strain; then, if a satisfactory immunizing response does not follow, resort may still be had to an autogenous preparation. Also, where there is reasonable doubt as to the bacteriologic diagnosis, or where the bacteriologic picture is very complex, as in pyorrhea, chronic otorrhea, resistant cases of chronic urethritis, bronchitis and asthma, in chronic infections of the accessory sinuses, kidneys, and bladder, an autogenous bacterin is often indicated.

In infections, and particularly in *chronic* infections, we rarely find the causative bac-

teria in "pure culture," that is, unmixed with other varieties of pathogenic microorganisms.

It appears that the human subject is the unwilling host of a great variety of bacteria that are pathologically inactive as long as the bodily resistance against infection remains at or above par.

Now, let one species of pathogenic bacteria gain a foothold, the bodily resistance immediately is lowered and the door is opened for other "malefactors of minute dimensions"; and a *mixed infection* results. For example, take lobar pneumonia; while the pneumococcus is, without doubt, the true etiologic agent in practically all cases of this disease, we usually find the streptococcus associated with it in large numbers; and who shall say that the latter germ is not responsible for a share of the patient's symptoms? Then, again, in pulmonary tuberculosis, it is the streptococcus, pneumococcus, and staphylococcus that are responsible for the fever, night-sweats, and rapid wasting of the tissues.

To give one more illustration, take pustular acne. Here, we find the acne-bacillus and the staphylococcus albus jointly responsible for the pathologic condition. Treatment directed at one variety of germ in these cases of "mixed infection" will not effect a cure; so, "mixed," or "combined," bacterins have been devised, the better to meet the requirements of the case.

Combined (mixed) bacterins should be given where mixed infections exist; and, if a mixed bacterin should be administered in an infection in which some of the germs represented in the bacterin are not present, no harm will follow. Mixed bacterins are not antagonistic in effect like incompatible drugs; hence, they cannot logically be compared to "shotgun" prescriptions. They merely stimulate the immunizing mechanism to the elaboration of antibodies antagonistic to the various bacteria represented in the bacterin, without regard to whether or not a corresponding infection exists.

On Prophylactic Immunity

Interest in the possibility of prophylactic immunization against two or more infectious diseases simultaneously and the treatment of mixed infections by means of mixed or combined bacterins has been greatly stimulated during the past few years by the researches of Castellani (of the University of Naples), Wright, Hitchens, and Allen.

Castellani last year presented (*Brit. Med. Jour.*, May 2, 1915) a summary of his laboratory and clinical evidence of the value of

combined bacterins for simultaneous immunization against Asiatic cholera, bubonic plague, Malta fever, typhoid and paratyphoid fevers, and similar combinations of other bacterins, for use as indicated by the endemic or epidemic occurrence of various infectious diseases. His work demonstrates that with combined bacterins large numbers of persons in military or civil life may be immunized against many of the more important infectious diseases by two or three injections of a combined bacterin; that such inoculations are harmless; that the reactions are not more frequent or intense than those following the administration of a single bacterin; and that antibodies are produced for each of the varieties of microorganism represented in the bacterin. Castellani's combined bacterin against cholera, typhoid fever, and "paratyphoid fever A and B" has been extensively employed by the Serbian Relief Commission, over 120,000 doses having been administered, without harmful result.

Sir Almroth Wright has recently brought into general use in the armies of the Allies a combined "asepsis vaccine," of which more than a half-million doses have been injected.

A combined bacterin similar to that of Wright's was first advocated by Van Cott, in 1909, and was extensively employed by Polak and by himself at the Long Island College Hospital in cases of puerperal sepsis, with remarkably good results. This "Van Cott mixture" is now extensively used by many surgeons and obstetricians as a prophylactic measure prior to abdominal operations, and also either before or at the time of obstetrical delivery.

Allen, who originated the method of immunizing against and treating infections of the respiratory tract, claims that insufficient polyvalency is to be blamed if results are not satisfactory. He states that a combined bacterin requires no reduction in the doses of its several constituents.

Head and Brown, after a study of the bacteria found in pyorrhea, adopted and successfully used a combined bacterin for this condition.

A. G. Huegli (*N. Y. Med. Jour.*, Apr. 24, 1915) says: "When I am called to a puerpera who shows a high fever, I do not hesitate to inoculate her immediately with a vaccine containing the various possibly offending germs; experience has taught me that I can depend upon a rapid recovery, and I never regret not having found out whether her condition was due to the streptococcus or the colon-bacillus, or, in fact, not having had it

scientifically demonstrated by culture-tubes that she really had a puerperal sepsis before I treated her. It suffices for me that such scientific curiosity might have involved the signing of a death-certificate."

My own experience has taught me, as will be detailed further on, that, when we consider separate disease entities, in such cases as that described by Huegli, no time is to be lost, if the unfortunate woman is to have a chance for her life or at least to be saved either from a pelvic operation or a life of invalidism. There is no time here for the preparation of an autogenous bacterin or even for a bacteriologic diagnosis; one thing is urgently indicated, and that is the administration of a combined polyvalent stock bacterin containing the streptococcus, staphylococcus albus and aureus, colon-bacillus, and perhaps the pneumococcus. This, repeated at two- or three-day intervals, in conjunction with other remedial measures to be given in detail, at the proper place, in a later paper of this series, seldom fails to effect a speedy recovery.

Why Immunity is Produced by the Dead Germs

In concluding our general survey of the subject of bacterin-therapy, let us consider one question we have failed to touch upon before, namely, Why employ dead bacteria (bacterins), when virulent living germs have failed to call forth the production of immunity?

The answer seems to be that live virulent pathogenic bacteria retard or even actually inhibit antibody production, thus tending toward a fatal termination, rather than to recovery.

Killed pathogenic bacteria (bacterins), on the other hand, have lost their power to produce disease and their entrance into the system, by therapeutic inoculation into healthy tissues, results only in abundant antibody production. Killed microorganisms do not possess the property of elaborating ferment capable of digesting live tissues, and, consequently, do not possess the destructive influence or devitalizing properties that are characteristic of virulent living bacteria.

For this reason, killed germs are more effective for antibody production than are the living, virulent organisms; and clinical experience demonstrates that this principle holds good as well during the course of an infection as when bacterins are employed for prophylactic purposes.

Bacteriology of Infections in General

Whenever it is possible to make a bacteriological diagnosis from an examination of

pus, sputum, or discharges, this certainly should be done; however, for obvious reasons, this is often impracticable, in which case we must depend upon our knowledge of the bacteria most likely to be at the foundation of the particular infectious condition with which we happen to be dealing. For example, in infections of the skin and its appendages, the bacteria commonly involved are the pyogenic cocci, namely, the streptococci, staphylococci, and sometimes pneumococci.

In infections involving glandular structures, as in tonsillitis, adenitis, and the like, we expect to find the streptococci, and sometimes the staphylococci.

In acute infections of the respiratory tract, we commonly find the pneumococcus, streptococcus, the various staphylococci, and sometimes the influenza-bacillus. In chronic in-

fections of the same region, we are very likely to find, in addition to the foregoing, the micrococcus-catarrhalis group and the pneumobacillus of Friedlander.

In infections involving the digestive system and peritoneum, the most common infective agents are the streptococci and the colon-bacillus, with sometimes the staphylococci.

In infections of the genitourinary tract, the gonococcus, colon-bacillus, staphylococcus albus, and various diphtheroid organisms are commonly found.

The foregoing paragraphs briefly cover the general bacteriology of infections and point the way to the proper combined ("mixed") bacterins. The specific bacteriology of each disease will be taken up as we consider the treatment of individual infections, in succeeding papers.

[To be continued]

The Intravenous Use of Sodium Cacodylate in Syphilis

By L. A. NEIMAN, M. D., Brooklyn, New York

IT APPEARS to me that arsenic in the form of sodium cacodylate is finding comparatively little application in the treatment of syphilis—possibly for the reason that it is not generally known that this salt may be given in comparatively large doses without producing toxic effects. Indeed, I know from personal experience that a suitable amount of this cacodylate may be administered intravenously with less trouble than salvarsan, while evoking no apparent reaction on the part of the patient.

Now that salvarsan is hardly procurable, and then only at a price entirely out of the financial reach of most of our patients, it may be of some importance to become familiar with an arsenical preparation that promises to vouchsafe clinical results equal to those from the customary though more expensive arsenical compound.

It seems certain that arsenic, if not curative, at least is useful in the treatment of syphilis; and, further, that it is not the particular form or combination of arsenic that produces the favorable effect, but rather the arsenic content in any salt or compound. Hence, my plea for the more extensive use of sodium cacodylate, a salt that may be given in doses the arsenic content of which is as

great, or greater, than that of the more popular form in use today.

It is my practice to administer sodium cacodylate by the intravenous route, since this occasions little or no pain and absolutely no discomfort after administration, as do the subdermal and the intramuscular injection. Then, also, it seems to me about as easy to give an intravenous injection as a subcutaneous one.

In such a course of treatment, I begin with 3-grain ampules; then, if no systemic or toxic effects are observed, I increase the dose to 5 grains after about five or seven days. Again observing no ontoward effects, I inject a dose of 7 grains in five or seven days, then continue this same (7-grains) dosage until altogether 10 such doses are given. After that I increase to 8, to 10, and then to 12 grains per dose, at weekly intervals.

Arrived at this point, I give my patient a rest from the arsenical treatment, but I continue with the mercurial course, which was given at the time with the sodium-cacodylate administration. After a month of rest, I resume the cacodylate for ten or more doses, together with the mercury. Then after a period of one month without any treatment, I make a Wassermann test.

If the latter should prove positive, I resume the former treatment, as described. On the other hand, if the test proves negative, then a Wassermann test is made regularly at intervals of three or four months.

In giving intravenous injections, the contents of the syringe should not be thrown rapidly into the vein, but injected slowly, so as to consume about two minutes in the procedure.

Scientific Medicine: What It Means. Does It Pay?

By E. R. RASELY, M. D., Morristown, Pennsylvania

THIS paper is not written as expressing the standpoint of the exceptional man who enjoys exceptional opportunities; rather, it is meant to take the position of the average physician who practices in the average town; who is bucking the world alone, without any hereditary competency to back him up or friendly influences of "graft" or special privilege to float him on. Perhaps it will apply to larger towns and country districts as well.

All medicine is scientific, and increasingly so. There is a surface manner of practicing medicine that may be scientific so far as it goes. I do not here intend to decry this, for I am of the opinion that it does pay. Neither will I defend it, for I hold no brief for it. What I want to be known and understood as my meaning of scientific medicine is that practice that takes into account all of the modern methods of diagnosis.

We often hear the word "scientific" bandied about by speakers having but a vague idea as to its meaning, as for instance: scientific research, scientific mechanism, scientific spirit, even scientific sport. What, after all, is science? "Science is concentrated common sense; the crystallized, reasoned wisdom of the ages." Thus, then, I shall view scientific medicine as the crystallized, reasoned medical wisdom of the ages.

What Scientific Medicine Means

It means first, and above all, diagnosis—accurate, positive diagnosis.

In my college days, Professor Garrettson had a series of favorite questions that he delighted in impressing upon his students. They ran in this wise: "Gentlemen, what is the first essential in examining a patient?" The answer was, "The diagnosis." "And where do we get the diagnosis?" was the next question. "From within ourselves," was the answer. "And, after the diagnosis,

what?" "The treatment." "And where do we get the treatment?" "From the books."

Without diagnosis, we can not have prognosis nor treatment, any more than an automobile can be prognosed as to its ability to run or to be repaired, when out of order, if the mechanic will not take the time and use brains sufficiently to look over the ensemble and examine the machinery.

Diagnosis Means Study and Taking Time

Diagnosis means study. We are in earnest, surely, in our desire to make no mistakes. With fifty percent of incorrect diagnoses recorded and reported by Doctor Cabot, of Boston, and this with all the scientific aids, is it not obvious that we must continually strive not to make mistakes? In the Massachusetts General Hospital, mistaken diagnoses are matters of record only; with us, on the firing-line, they are disasters.

If diagnosis means study, it means also time. This is self-evident.

There are only twenty-four hours in the day, as always. The increased time necessary to examine our modern patient means a smaller number of patients that can be examined than formerly. If this increased time devoted to the diagnosis is not to be considered and paid for sufficiently to remunerate the physician for that time, when and where then, I pray you, is the conscientious doctor to obtain a competency? I grant that a certain amount of reputation results from honest, earnest endeavor, but there also accrues a reputation for dishonesty in one's not being able to meet the expenses incident to the practice that is farther reaching and more easily retained.

Reputation for medical efficiency is a fleeting, evanescent thing. You cannot gain a reputation and rest upon your oars idly for one moment. As Swift says: "Whoever hath an ambition to be heard in a crowd

must press, and squeeze, and thrust, and climb with indefatigable pains."

In any case, it may be a question of our ability, with all our aids, to make a satisfactory diagnosis. However, I believe the question generally uppermost in our minds, in any individual case, is: "Am I able to afford, or am I going to be remunerated sufficiently for the time required to make a diagnosis?" The patient's ability is limited, and so is ours, along the financial line. The case is put up to us in such a way that the lack of a diagnosis will be misconstrued and reflection cast upon our ability, when it is not a question of ability, from a scientific standpoint, at all.

These patients have an advertising-potential, adverse or otherwise, far and away beyond their financial ability. I have jumped into cases of this kind and made diagnoses after considerable study, and made good. Again, and just as frequently, my efforts have been misunderstood, through ignorance or downright viciousness, with the result that my patient has gone to some more superficial diagnostician, who told him a different story, one more to his liking, considering the difference in price especially; and to the day of my death I shall be bounded by this report—untruthful as it may be—of my inability to diagnose that case. Eventually I may be a winner, but it will be after the seeds of evil have been sown and their effects have devastated my soul.

More in Particular

Particularizing as to what scientific medicine means, allow me to say that it means a methodical history of a case, not orally, but in writing. The subjective symptoms are precisely what they have always been, but the collation of these symptoms is an entirely different proposition and a more formidable affair than in times not so far distant. While these are extremely satisfactory, they are time-consuming when taken directly; if through the medium of an interpreter, double or treble the time is necessary.

Then comes the objective examination—and here the difficulties are great. In this examination, there may be required all the modern methods; and these are being added to from time to time. Starting methodically with a complete physical examination, we proceed to round up the case, using such scientific aids as circumstances demand, until we are satisfied beyond the shadow of a doubt as to the correctness of our findings.

It is a problem in arithmetic, properly solved and then proved.

In many cases, by means of precise methods, we can, with great beauty, map out a working-knowledge of the case. It may mean a thorough urinary examination, both chemical and microscopical; an examination of the blood-count for leukocytes, erythrocytes or differential, or the hemoglobin content, an analysis of the gastric contents; a sputum examination; and possibly an x-ray examination. We may have to obtain serum for a Wassermann or make a luetin test for syphilis. Again, it may be necessary to make a Moro or a Pirquet test for tuberculosis, or examine the vaginal or urethral discharges for gonococci, or chancres for spirochetes; and so on, through the list. These procedures are in the domain of the ordinary practitioner.

The oculist says, "Look into the condition of the eye more frequently." The oral surgeon gives some lurid examples of failure to look into the mouth, and the proctologist gives you the same advice regarding the other end of the alimentary canal. The abdominal surgeon is continually chiding the general practitioner for not diagnosing his cases earlier and thus aiding the surgeon in more readily effecting a cure. Continually our attention is called to our sins of omission and commission. If these same surgeons could hear the advice frequently given and so infrequently taken, they would learn a valuable lesson on the real value of the average physician. The gynecologist raps us for overlooking pelvic conditions, and these must have a lookin. And so it goes. We are damned if we do, and we are damned if we don't.

Thus, as you see, considerable time can be spent on the average patient of average means or of no means at all. But, who is to pay for all this?

Does It Pay?

The greatest hindrance, as I see it, to putting the medical profession upon a firm financial basis—is the lack of harmony in the various elements that go to make up the body medical in any individual community. Schisms and individual enmities cause interne-cine strife that makes for active competition, sure enough. But, it results, in the medical world, as it has resulted in the industrial world, in a chaotic competition, in which the poor physician is caught between the upper and nether millstones.

The only relief is in combination; here alone we have the individual units so inde-

pendent that they are inclined to remain actively competitive. A sad condition of affairs is, that, while the physician is striving with might and main to keep his head above water, the mass of people persist in believing that he has finances in abundance. Consequently he does not get that sympathy that he deserves. There isn't a charity anywhere that does not almost at the outset appeal to the physician for money, people forgetting that this very charity—the greatest of all virtues—is the one dark spot in the doctor's financial sky.

With our altruistic, idealistic, philanthropic convictions developed to the utmost, we are liable to—usually do—have anything but a well-balanced conception of our duty to ourselves and families. These altruistic ideas, balanced by some more practical ones, may be all right. I am sure that the physician who can live on easy-street is in a better position to cultivate the altruistic and philanthropic than the one who is living next door to penury. Solomon says, "Get wisdom, and with all thy getting get understanding." All I can say as to this is: "How long, O Lord, will it be until we get understanding?" If at the end of a long life we have been unable

to gain a competency from the practice of our profession, then, surely, it did not pay.

The cost of a medical education is almost prohibitive at present for the poor but ambitious young man; or, if he finds a friend who is willing to advance the necessary funds, trusting to the young man's integrity, the latter, the young physician, will find a long, weary road ahead of him. Then comes the fitting-up of an office in an up-to-date manner, with instruments of precision such as he has been taught are necessary to do scientific and conscientious work. He must buy an automobile, the first cost of which is great and its upkeep greater, to get there quicker, only to be paid less for his dispatch. We find our young physician starting out with a handicap that is serious to contemplate.

And, if, when the wintry side of a long, eventful practice comes, when the shades of night are falling fast, when the summons comes to join the innumerable caravan, when with wife and family about him there are no gathered sheaves and no garnered grain, then will an unreverential world pronounce the dread sentence, "Failure" and he, the physician, will be gathered to his fathers.

Puerperal Eclampsia

II. The Treatment of the Albuminuria of Gravidity

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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[Continued from page 331, April issue.]

AS SOON as a pregnant woman has been found to be suffering from albuminuria, she should receive prompt and vigorous treatment, and be kept under close observation until her delivery. Indeed, she should not be lost sight of for several weeks after delivery, until her kidneys have resumed their normal functioning. It is not an infrequent occurrence to see these patients after delivery passing into a condition more serious than that during pregnancy. It is true that in most of them, as soon as labor is over, the kidneys rapidly return to the normal condition, whether treatment is had or not; still, I can recall several cases in which this did not happen. I know of a case, lately, in which a young doctor took it for granted that after labor the kidney trouble would take care of itself, but with the result that at the end of two weeks the

patient's condition was so serious that her family called in an older doctor, while the young man forfeited their confidence completely.

As a rule, these patients respond well to treatment, much better than during the pregnancy. Before labor, with our best efforts, the most we can usually accomplish is to ameliorate the symptoms sufficiently to carry the patient through safely. We can but rarely overcome the albuminuria entirely. But these cases of postpartum dropsy generally yield promptly to treatment, unless Bright's disease existed before the pregnancy.

The Old Catharsis Plan

Thirty years ago, albuminuria of pregnancy was almost universally treated by resort to excessive catharsis with elaterium, calomel, croton-oil or any hydragog that would produce copious watery evacuations. The pa-

tient's health and strength were greatly reduced by these drastic measures, and often the fetus was reduced to mere skin and bones. At the present day, such violent treatment has been pretty generally abandoned. In a few very severe cases, hydragog cathartics may be employed in moderation as an adjunct to other treatment, but ordinarily even this is unnecessary. For many years, I have given such patients no cathartics, merely prescribing mild laxatives for relieving constipation.

The principal objections to the catharsis treatment are: first, that it unduly weakens the patient just when she needs all her strength; and, second, that it does not reach the cause of the trouble, but merely aims at the most obvious symptom, namely, the dropsical condition. In so far as it produces elimination, it has some value, but has little effect as to the kind of elimination most needed—that through the kidneys.

The "Dry," or Water-Abstention, Regimen

Another mode of treatment that has had some vogue consists in depriving the patient of all liquids. This has always seemed to me utterly unscientific, because it does not go to the root of the matter, but is merely toying with one symptom, the dropsy, and that at the expense of adding thirst to the patient's other miseries. The dropsy can be reduced more satisfactorily by other means.

The Skim-Milk Regimen

In the past few years, considerable has been written in an attempt to prove that putting the patient upon a skim-milk diet is the sovereign remedy for the abnormal condition of the kidneys. There is no doubt that many of these patients are benefited to some degree by an exclusive milk diet; but there are many who cannot bear milk, while others suffer general impairment of strength on this diet. Where it agrees, I can see no objection to its partial adoption, although the condition is too serious to depend upon this alone.

The No-Albumin Diet

Some writers have vigorously contended that these patients should be deprived of all albuminous foods, just as in diabetes we cut off the sugar-forming foods. But this seems to me another case of very superficial reasoning, like that advanced to justify the "dry" treatment.

The conditions differ radically from those in diabetes. In the latter disease, the con-

tinual passing of sugar through the kidneys finally damages them irreparably. Therefore, it becomes a very important matter to reduce the sugar to the lowest possible amount. But the woman with the kidney of pregnancy is not losing albumin because she has too much of it in her system. She is losing it because her renal vessels are in an abnormal condition. The loss of the albumin is not the danger that threatens her. We are not so much afraid of what she is *losing*: it is what she is *not losing* (urea and other wastes) that endangers her safety.

In determining the diet of these patients, my object is, to have them well and comfortably nourished. An excessive amount of meat or albuminous food is bad for them, just as it is bad for everybody. Still, if one of these patients desires a moderate amount of meat or eggs, I permit her to have them, and the results have never given me reason to change my policy. A varied diet is more conducive to health than a limited one, and the patient who is well nourished is better fitted to go through her parturition, other things being equal, than if her strength had been depleted by excessive catharsis or a starvation-diet.

The views expressed above are not an untried theory. For many years I have applied them in all my cases, even severe ones, and the results have never disappointed me. Sometimes, when my patient has been in a hospital, my course has been observed with much doubt and headshaking by the staff, but the excellent results have, in the end, silenced criticism. So long as I can maintain proper excretion of wastes through the kidneys by means of the medication described below, I interfere as little as possible with the patient's normal habits.

The Digitalis Treatment

As soon as a pregnant woman shows signs of kidney complications, she should at once be placed upon some preparation of digitalis. However, the ordinary doses will accomplish little. It is absolutely necessary to give heroic doses—of course, under close observation.

The best plan for this digitalis-therapy is, to begin with a safe dose and then to increase this steadily until the pulse rate has been reduced to 60 or even lower. The rapidity with which this result is attained should depend upon the patient's condition. If her condition is urgent, and all her symptoms severe (much dropsy and scanty urine), the

drug should be given so boldly as to produce physiological signs inside of twenty-four hours, because delay may result in an eclamptic attack.

In giving such doses, the patient must be closely watched and the pulse recorded every two hours, in order to avoid digitalis-poisoning. Moreover, we must bear in mind that the effects of this drug do not cease when we stop giving it.

Where the albuminuria and its accompanying symptoms are moderate, it is better to go slower, taking three or four days to bring the patient fully under the influence of the digitalis. I usually begin with 10 drops (*not* minimis) of the fat-free tincture every three hours; increasing the dose by 5 or 10 drops each day, until the pulse falls to the rate named above. With this dosage, it will be often enough to record the pulse three times every twenty-four hours.

If the patient cannot afford a nurse, some member of her family may be taught to count and record the pulse, but the doctor's supervision must be close enough to interpret properly the pulse indications. When the pulse has come down to 60 or below, it is better to stop the drug until it goes up again. Merely giving a smaller dose will not always prevent a further descent. The cumulative action of digitalis must always be borne in mind.

In giving the mother large doses of this drug, the fetal heart beats should occasionally be counted, too. I never had any harm come to the fetus but once, and that was where the mother suffered digitalis-poisoning through a druggist's mistake. The maternal pulse went down to 30, with rather alarming symptoms, but she rallied under stimulants, and, curious to relate, had no further albuminuria; however, a week later she was delivered of a stillborn child, doubtless a victim of too much digitalis.

As soon as the physiological effect of the digitalis becomes well marked, the action of the kidneys becomes more normal; the quantity of urine increases, its specific gravity rises, the albumin diminishes, and all the symptoms improve. In treating a drop-sical condition after delivery, results are obtained more readily than during pregnancy, the quantity of urine secreted sometimes being enormous. This would seem to indicate

that pressure on the kidneys interfering with the renal circulation is a factor in causing the albuminuria of pregnancy.

What Preparation of Digitalis Should Be Used?

For years I was in the habit of prescribing the infusion of digitalis, and even today many obstetricians adhere to this. But I was hampered many times by the fact that the stomachs of many persons will reject it when taken in the large doses needed to be effective. Besides, it varies so much in strength that a more uniform preparation is very desirable. When the fat-free tincture was brought out, I gave it a trial, and results were so satisfactory that I have continued to prescribe it ever since. It is uniform in strength, the dose is small in bulk, and the nauseating properties (saponins) of the plant have been removed.

I have been asked why I do not use the active principle rather than the tincture. My reasons may be summed as follows: (1) When I have found a satisfactory remedy. I am slow to change it. (2) The action of an active principle is not always the same as that of a preparation containing all the medicinal virtues of the plant. Digitalis contains several principles, and to determine which one or what combination of them would give a satisfactory result in puerperal albuminuria would involve considerable experimentation, more than I care to inflict upon my patients in so serious a pathological condition. [There are excellent concentrated preparations of digitalis, containing all the therapeutically active glucosides, without the dirt and waste.—Ed.]

I also have been asked whether I never prescribe any other drug in conjunction with the digitalis. As to that, in the past twenty years, I have had three cases in which I thought it advisable to give something in addition to the digitalis. I tried full doses of acetate of potassium, which produced satisfactory results in two of the cases, but failed in the third. In the latter I then tried diuretin with the digitalis, and had excellent results. In a later case, I tried diuretin alone, to see whether it would answer as a substitute for digitalis, but it failed to benefit the patient until digitalis was given with it.

[To be continued.]



The Treatment of Acute Articular Rheumatism in an Infant

By CLIFFORD E. HENRY, Ph. G., M. D., Minneapolis, Minnesota

SO far as I have been able to discover, there have been recorded only nineteen authentic cases of acute articular rheumatism occurring in nursing infants; but, while rarely attacking nursing infants, it is not uncommon in children past the fifth year of life. The cause of this disease, in my opinion, eventually will-be found to be some toxemic agency.

The case which I report herein I consider unique, in that there is not only a history of the immediate illness of the child, but a preceding history on the part of the mother.

On November 21, 1914, I delivered the mother, and the labor was prolonged and difficult, while her recovery apparently proceeded normally, aside from the temporary shock consequent upon the forceps-delivery. About two weeks later, on December 1, the nurse noticed some purplish spots on the woman's legs, but she had no fever and was feeling well; she left the hospital on December 6, when both mother and baby seemed to be in good condition.

On December 11, I was called to the house and was told that the baby had cried all day, having the colic and also having caught its left big toe in the blanket and sprained it. The toe, I found, was red and swollen and painful when touched. I advised a compress wet with witchhazel extract. The baby then weighed just the same as at birth, namely, 8 pounds.

Dec. 12. Temperature, 101° F., rectal. The right shoulder is very painful. Cries whenever she is touched or moved. Bowels constive. Ordered: Calomel, gr. 1-10; also, 5 grains of sodium salicylate dissolved in 15 drams of water; one teaspoonful to be taken every four hours.

Dec. 13. Temperature, 99.5° F., rectal. The shoulder does not seem so tender, but the elbow is somewhat swollen and painful when moved. Had two bowel movements; stools look normal.

Dec. 14. Temperature, 100° F., rectal. Joints about the same. Had no bowel movement without an enema. Ordered thtture con-(gr. 1-10) and sodium salicylate mixe calomel tinued.

The mother having a cracked nipple, I ordered compound tincture of benzoin applied and a nipple-shield worn.

Dec. 15. Temperature, 100.8° F. Changed the salicylate dose to 1-2 grain in solution every four hours. There is a mitral murmur.

Dec. 16. Temperature, 99.8° F. Doctor Sedgwick was called in consultation as to the advisability of using an autogenous vaccine. He confirmed my diagnosis of acute articular rheumatism and was of the opinion that such a vaccine would be of no value.

Dec. 17. Temperature, 99.8° F., rectal.

Dec. 18. Temperature, 99.8° F., rectal. Added colchicine, 1-12S-grain, thus making the solution consist of sodium salicylate, gr. 10; colchicine, gr. 1-12S; water, 20 drs; with instruction to give 1 teaspoonful every four hours.

Dec. 19. Very restless all night. There seemed to be a spasmodic condition in the abdomen. Had no bowel movement since yesterday morning. Made up the medicine without the colchicine.

Dec. 20. Temperature, 98° F. Has not been so restless.

Dec. 21. Temperature, 99.6° F., rectal. Slept well until 1 a. m., then waked with cramps. Bowel movement yesterday by the aid of an enema; stool very green. Elbow and shoulder more swollen and quite red; thumb quite red. Ordered galactenzyme, half of 1 tablet every four hours.

Dec. 25. Temperature, 99° F. Has lost 1-4 pound the last week. Arm and toe are better, but elbow unchanged.

Dec. 27. Temperature, 98.6° F. Arm the same, otherwise better. When she wakes now she will lie without crying.

Dec. 29. Arm less swollen and she can move it.

Jan. 2. Temperature, 98.6° F. Very much better in every way. Reduced frequency of medicine to one dose every six or eight hours, depending on the temperature.

Jan. 4. Temperature, 98.6° F. There is very little redness and swelling of the arm. The heart murmur can be heard only after a crying-spell.

Now we come to another chapter in this history, one which I consider to have a very important bearing upon the case.

Jan. 7. The mother complained of pains across the lower abdomen, worse in the region of the appendix. Told her that she

must stay in bed and ordered an ice-bag applied to the lower abdomen.

Jan. 9. Woman went to St. Paul and was taken very sick with pains in the region of the appendix and in right side of the chest. Friction-sounds were heard in the axillary line at about the 6th, 7th and 8th rib. Pulse, 92; temperature, 100.2, respiration, 24. Ordered ice-bag to the abdomen. Also, a solution of aconitine, 1-800-grain, and bryonin, 1-64-grain, repeated every hour.

Jan. 12, 9 a. m. Pulse 84, temperature 98.6° F., respiration 18.

Jan. 12, 1 p. m. Performed operation at the hospital, making median incision. The abdomen was filled with a dirty dark fluid; appendix highly inflamed. Right fallopian tube was highly inflamed and covered with small granules that looked like drops of dew. Appendix and tube were removed. The patient standing the operation well, the cervix and perineum were repaired at the same time. Recovery proceeded uneventfully.

Feb. 2. Patient feeling fine, wound entirely closed. In March, 1915, I received a letter from the husband saying that the wife and baby were well and feeling fine.

There is no doubt about this having been a true case of acute articular rheumatism in the babe, and I believe the trouble commenced with the purpuric spots on the mother's legs. The infecting agent came to the baby through the breast-milk. Because of this, I am inclined to believe it was a toxin. The infection culminated in an attack of appendicitis, with what looked to be a tubercular tube, although the mother has been well since.

This could not have been scurvy, because it was controlled by the salicylates and the child was breast-fed. It was also too young for scurvy to have developed, even though some investigators have found a bacterial invasion in the blood of scorbutic patients.

None of the nodules of rachitis were present.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

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[Continued from page 324, April issue.]

FOLLOWING are some of the principal dietary faults commonly committed, as noted by Dr. A. L. Benedict:

Diet Suggestions

1. Milk diet. Deficient in iron, contains approximately 4 percent of each organic nutrient, hence, deficient in carbohydrate; yet, levulosuria is liable to develop if 3 liters, or even less, is ingested in a day, corresponding to only 120 Grams of carbohydrate. Introduces too much water for the adequate ration of proteid, while fat is exceeded. Especially objectionable in persons exposed to cold or otherwise requiring energy and heat, and in those prone to colon-bacillus virulence, hence, in typhoid-fever.

2. Broth (beef-tea) diet. Contains practically nothing but water, salts, purins, and a little gelatin. Valuable only as a stimulant, distinctly contraindicated when purins are in excess, as in gout, lithemia, hepatic and renal disease; but having almost no nutritive value.

3. Egg diet. Seldom tolerable, nearly lacking in carbohydrate. Each whole egg contains about 8.5 Grams of proteid, 5 of fat, each white about 6 of proteid. Six eggs constitute a fairly adequate ration of fat and proteid, but it is difficult to add the necessary carbohydrate alone. If given raw, the albumin is apt to pass through the kidneys, in part, unutilized.

4. Spoonful diet. It makes very little difference whether a teaspoon or tablespoon is used or whether the interval is half an hour or two hours; not enough nutrient can be given of any liquid or semiliquid food, while the stomach is kept irritated.

5. Raw meat diet. Parasites are likely to be introduced, at a time when the patient is especially susceptible. Deficient in fuel value.

6. Meat juice and meat extract diet. The maximum richness is about 7 percent of proteid, as prepared for administration, hence nearly a quart is required for the proteid ration, and it is absolutely impos-

sible to give enough to provide the necessary calories.

7. Cereal diets. Most excellent if properly combined with milk, eggs, butter, and meat, but usually given without due attention to variety and total ration. Lacking in iron.

8. Ambulant diets. While usually fairly well regulated as to negative danger, that is, with regard to positively harmful and indigestible ingredients, too little attention is paid to variety and appetite, and the physician usually has not the faintest idea of how much protein, fat, and carbohydrate is actually being taken.

9. Frequent-meal plan. Supposed to avoid overtaxing the stomach, especially in atony, dilation, and ptosis, and to increase the total assimilation in reduced strength. Almost invariably infringes on the period of physiologic rest for the stomach, hence, renders these conditions worse and sometimes greatly exceeds or falls below the total ration needed. Systems of 13 daily meals have been seriously proposed by physicians of influence. Usually 3 to 6 daily meals are sufficient.

Considerable variations are likely to occur in the quantity and quality of food which any individual consumes, as well as in the assimilating processes by which what is taken into the stomach is animalized and fitted for repairing the waste of the system. If more food be assimilated than the waste of the body requires, a state of repletion must be the inevitable result. But repletion may also take place under a moderate and even abstemious use of food when, from sedentary habits, inactive life or other cause, appropriation of blood by the nutrient and other secretions is languid and insufficient.

As repletion, then, may take place under very different circumstances, so is its presence marked by different phenomena. Whenever it arises, one or two consequences are sure to result: either it excites the several functions if sufficiently healthy and vigorous to increased actions, leading to its speedy appropriation and removal; or, if these be weak and unable at the moment to institute and support these increased actions by which the redundant matter is to be appropriated and expelled, then, oppressed by a labor to which they are unequal, they manifest a decline of even their ordinary power, and all the outward phenomena of debility are displayed. To discriminate this state from one of real debility arising from exhaustion of animal power or from defective nutrition, is

a matter of practical importance not inferior to any which medical science may be engaged in illustrating.

The Diet of the Aged

It may be doubted whether any disease, excepting such as results from a morbid poison, ever takes place suddenly or without previous derangement of the general health, cognizable by its appropriate manifestations and capable of being corrected so as to obviate the morbid accession to which it leads. If this can be demonstrated, it is clear that this introductory stage of disease is of the highest importance, as being that to which prophylactic treatment can be most beneficially directed and also as forming a part of the ensuing disease essential to its complete history, and without a knowledge of which its intimate nature or the series of morbid changes never can be thoroughly understood. Such a definite expression of opinion appeals to one's own experience. Apoplexy, aneurysm, angina pectoris, sudden death from failure of power in a fatty heart, all are the outcome of a full artery; and a full artery is, in turn, the result of the blood being highly charged with nitrogenous waste. If the latter could have been removed, all the rest could have been avoided. It is only when some untoward accident happens that medical aid is called in. Until this period arrives, medical aid is rarely sought, and, when it is called in, it is too late to be of much service. These grave diseases of advanced life are the outcome of a condition readily amenable to treatment—if taken in time.

Where there is a tendency to the full habit, great moderation in food and drink should be practiced, involving a great deal of self-denial on the part of the individual; but the result is worth all the pains involved. The sense of lightness, the capacity to get about, the better spirits which are the outcome are a sufficient reward; while beyond lies the lessened liability to these serious issues of the full habit.

As age goes on, there is a loss of tone in the various organs of the body; just as much as there is in the cerebrospinal nervous system and the muscular system. As locomotion becomes impaired in age, so the functional activity of the various viscera wanes. It is found that the organic nervous system is impaired and that there is a development of connective tissue in the nervous centers with an increase of pigment—while the true nervous tissue is deficient. Such

being the case, the loss of functional power is readily comprehensible.

Indeed, development of connective tissue, with decrease of normal elements, is the change, above all else, in the viscera of old age. Beyond this, there are special changes in the anatomical structures of the intestinal canal. Participating in the general wasting of the organs and tissues, the stomach and intestines lose bulk and become thinner in old age. Their glandular apparatus is also atrophied. The wasting of the tissues composing the stomach and intestines is more obvious in the duodenum, jejunum, and ileum. In some cases, it is carried to such a degree as to admit of the contents of the intestines being distinctly seen through the attenuated structures. In striking contrast, the larger intestines occasionally preserve their natural thickness, chiefly through a compensating hypertrophy of the muscular coat. The mucous membrane is usually paler than in the normal state, but generally acquires an ash-gray color as life advances. In the stomach it is often traversed by enlarged veins, which assume a varicose character; these becoming more numerous in the lower portions of the intestinal canal and being particularly conspicuous toward the termination of the colon and rectum.

Stress has already been laid upon venous congestion of the portal circulation; and, amid other senile changes, there is developed a varicose condition of the veins of the alimentary canal as advanced life is reached. No wonder, then (if a degenerate state of the organic nervous system is linked with disappearing muscular fibers in the small bowels and a glandular decay in that portion of the bowels where absorption is most marked; and to these is added a varicose condition of the veins), that the digestion and assimilation of aged persons are enfeebled.

Such anatomical consideration throws a flood of light upon the digestive troubles of old persons. The teeth are often decayed or lost, and mastication is difficult, so that much of the food passes into the stomach without the preliminary chewing that prepares the food for the action of the stomach—itself enfeebled, and scarcely fit for its own work. Consequently, we see that the food should be adapted to the requirements and capacities of the aged. "Once a man and twice a child" is true of man.

As the digestive powers wane, the condition approaches that of the infant before the teeth are developed. We do not give meat to infants before they have teeth with

which to masticate it. So in old age the dietary should approach that of the nursery; and in very advanced life baby-foods are distinctly indicated. Milk with farinaceous foods or meat-soups with farinaceous matters are suggested. And, remembering the physiology of digestion, it is clear that foods in which the starch has already been acted upon and changed into soluble dextrin and maltose are clearly to be preferred. Malt is a typical food, and ground malt ought to be added to any farinaceous matter before the milk is poured on for a milk-pudding. Also, baked starch is preferable to raw starch, as having undergone some change homologous to the digestive process. If baked flour or broken biscuit be employed with the malt, then an ideally digestible food is furnished to the enfeebled system. Such a milk-pudding is infinitely better than the ordinary one of raw starch sweetened with cane-sugar, as not only being more digestible, but as being far less liable to turn acid in the stomach—a matter of no small importance in feeding elderly persons.

Indeed, all food should be such as to tax but little the digestive powers, which gradually fail with advancing age. This is too self-evident to require much insistence. The meals should be small, and they should consist of porridge (all the better if made with cereals or other farinaceous matters that have already been exposed to a high temperature), with a little fish for breakfast, and some sound fruit. Then, for lunch, some milk and malted food, with a digestive biscuit and butter, and a generous glass of wine or some aromatic nonalcoholic fluid would be suitable. At 5 o'clock, it might be well to have a cupful of beef-tea, thickened with shredded maize or an equivalent of meat-broth and cooked farina. Dinner should consist of white fish, a sweetbread or chicken; a pudding of cooked starch or the malted material just described, with cheese, and some good fruit. A glass, or even two, of sound wine—"the milk of the aged"—would not be out of place. Of course, there are hundreds of persons well advanced in years who would have the most unbounded contempt for such a restricted dietary and who still yield to the temptations of the palate; still, the principle of such dietary is well founded, and such a series of meals forms a base-line of what the food ought to be and a guide as to the direction to be taken in the dietary.

It would be insufficient, some old gourmand might plead. Certainly, it might

be as to the palate, but not as to the actual needs and requirements of the system. Tissue change and tissue repair are not great in advanced age; while accumulation of earthy salts, especially in the arterial walls and valves of the heart, is part of the diseases which strike at the waning life of old persons. First and foremost, indeed, comes the nutrition. As the maladies of youth are largely matters of defective nutrition, so in old age the diseases are closely linked with the presence of redundant waste or effete material in the body. The food should be neither too great in bulk nor too rich in plastic materials, but such as is required to maintain the body temperature and repair the tissue waste. The tissue waste is small, therefore, the albuminoid elements of the food should be but sparsely supplied; the body-heat is prone to be low, so, hydrocarbons should be given freely. Milk and carbohydrates should form a large portion of the dietary.

It is obvious that the food of the aged should not consist too largely of albuminoid materials. It is the more necessary to insist upon this, as the idea is so widespread and so deeply rooted that the flesh of animals is at once the most digestible and sustaining food. The lesson preached all along is that of many dire consequences of a blood laden with nitrogenized waste. The tissue repair of the system in age does not require much albuminoid material. A little protein food will meet the actual necessity. The rest is luxus consumption. It was all very well for Isaac to crave after savory meat before he died; the very fact shows that he did not often get it and that the eating of this meat was the preparation for an important family ceremony. The pottage for which Esau bartered his birthright (a mess of lentils and vegetables) was in all probability the staple food of those primitive people. Indeed, Canaan was not looked to as a country of beeves and butchers' meat, but "of corn and wine" and as "flowing with milk and honey," while the excursions into Egypt from time to time tell of a corn-eating race. Bread and milk and honey formed an admirable dietary for longevity—especially for a dyspeptic race.

The food of the aged, indeed, should be once more like the food of the nursery. Farinaceous matters with milk or messes with lentils, that is, casein, either in animal or vegetable form; the most easily assimilable of all forms of albumen, possessing, too, the least tendency to the formation of uric

acid. Again let it be insisted upon that a great deal more albuminoid matter than the system requires can be eaten with impunity, so long as the liver retains the power to convert the excess into soluble urea. But when this power is waning and a degraded activity takes its place, the tendency is to form uric acid or urates; both only sparingly soluble. Consequently, if more meat be taken than the system requires, then the proportion of waste matter in the body must be abnormally large. It may seem unnecessary to insist upon this again and again, *usque ad nauseam*, but "the heart of man is deceitful above all things and desperately wicked; who can know it?" Jeremiah found: and so is his palate!

Bread and milk and honey form a typical meal for aged persons. To many, of course, such a dietary would be so monotonous that they would probably decline eating altogether; still, it is a type of what the dietary ought to be. Farinaceous materials, porridge, hominy, shredded maize, boiled with milk, should form the first item of breakfast. This might be followed by bread and butter and honey or jam. Then luncheon should consist of a little fish, with some real melted butter, or some well-mashed potatoes in which the cook has not been a niggard with her cream, followed by a milk-pudding and some fruit. Then dinner should run on something like this line: a good soup with cream or marrow in it, a sweetbread or fish, a little chicken or game; a milk-pudding, cheese, and a digestive biscuit. Wine need not be prohibited. A glass of Port, Madeira or Marsala (according to the means) may be taken at luncheon, and double the quantity at dinner. If the person is a teetotaler, then some of the tonic drinks now on sale may be taken. Such would be an ample dietary of suitable materials—better than the "flesh-pots of Egypt!"

There seems to be too little fruit, as a rule, allowed in the dietary of old patients—and young ones, too, some would say. Perhaps a considerable quantity of fruit to one unaccustomed to it may derange the bowels, but then it comes within the limits of human possibilities to avoid this. A certain quantity of fruit daily would be good and would tend to keep the bowels open. In summer and autumn, fresh fruit is available; in winter and spring, there are the store fruits, dried fruits, and canned fruits; or fruit can be stewed and served with milk puddings. As to pastry and meat, they are unsuitable; the first from the difficulty of its digestion,

the latter from the inability to get rid of it in its waste form. Such meat as is taken should consist of white meat, fish or fowl, and game. Fat is often repugnant to the

palate, but it is capital fuel-food, and that is what old folks mainly require. They do best with it as in milk.

[*To be continued*]

Safety First in Automobiling

By A. L. BENEDICT, M. D., Buffalo, New York

Editor of "The Buffalo Medical Journal"

IT SHOULD be remembered that this series of articles on the use of the automobile is intended for beginners.

As a general rule, the one imperative necessity to avert accident is to be able to stop promptly. To this there are numerous exceptions, but the beginner should firmly impress upon his mind at the very outset exactly what he must do with his feet and hands when he wants to stop the car. He should also be sure to hold out his hand to warn those behind him, while he will probably instinctively make a noise of some kind, orally or by horn, as an additional warning. Even in the five percent of cases in which sudden stoppage is the most dangerous procedure, it will almost invariably be free from legal dangers, and the damage will be to the rear, and less vulnerable, part of the car. For instance, a policeman may signal to come ahead quickly and may be very cross at your sudden stopping; but he can scarcely make an arrest because of it; whereas, he may do so for a violation of contrary directions. A sudden stop may cause a rear-end collision, but the man behind is theoretically, if not in practice, required to allow for such emergencies; and, if he cannot be held to pay damages, it will be only the rare exception that he can collect them.

Until one has learned to control the car automatically, it is a wise plan to go at the minimum high-gear speed and to make turns and street crossings on neutral, with foot on the brake. It is certainly better to waste gas and lose time than to incur danger. Rehearse sudden stopping, even at the expense of a little tire wear, when it is not necessary; and, for weeks and especially after dark, rehearse frequently, at least the foot and hand movements up to the actual application of the brake, until they become mere reflexes. Do not run your car farther than the nearest repair-place, if there is any imperfection of the brakes. For most makes of car, impress it on your mind that the emergency-brake is

of no use in an emergency. Do not brake and reverse at the same time. If the emergency is great enough to justify the use of the reverse-lever while going forward, do not lessen its effect by braking also.

Always go slow on entering a narrow place or one where the road may suddenly end—and these factors apply to the garage. Stop and look at both sides of any doorway before you pass it, until you are thoroughly familiar with it. It seems as if there were a peculiar perversity attaching to doorways, so that a projecting lower portion, a hasp, a pipe built into the floor or any litter piled on it restricts the free passage to the minimum.

Unless you are an expert, do not go backward at maximum speed nor without making occasional almost full-stops. Theoretically, steering is as simple as in controlling forward movements; but, remember how extremely difficult it is for most persons to perform accurately any kind of reversed or mirrored motion.

Skidding

Whenever the inertia of a vehicle is sufficient to overcome the friction of the wheels on the road, the friction is practically never so evenly balanced but that some degree of lateral slipping will result. Given a sudden turn at high speed, on a perfectly dry pavement, inertia either will cause the wheels of the side nearer the center of the radius of turning to rise in the air, possibly so as to result in overturning, or the tires will slide laterally—skidding. Dust, mud, snow, oil, dampness or unevenness of roadway on the one hand, weight of car and speed increasing inertia or relative grasping power of the tires—corrugation or smoothness—on the other hand, influence the tendency to skidding. As a rough rule, it may be said that, with a dry and firm roadway, any car may be operated up to any practicable speed without danger of skidding, unless for a sudden stop or turn of more than 45 degrees. It is even

more important to remember the converse of this rule, that skidding will occur to a dangerous degree at a speed beyond 20 miles an hour, upon a sudden stop, a right-angled turn or even a turn of a less degree in the winding of a road or in passing another vehicle if the steering-wheel is jerked.

Dust and unevenness of roadway do not require corrugated tires for light cars and, at moderate speed, do not involve serious danger of skidding for any car, except at turns and short stops.

Oil and water, unless sufficient to make a puddle on a smooth surface, such as asphalt or brick or a macadam road in perfect condition, do not cause much danger, nor do they on a dirt road unless a soft mud is formed. Oil and water together, on an impervious pavement, make a very dangerous combination. Thus, the gradual accumulation of oil on asphalt in dry weather does not cause danger, but makes a very slippery foundation as soon as enough rain has fallen to wet the pavement thoroughly. On the other hand, more rain washes off the oil and the pavement becomes safer again.

A little light snow scarcely interferes with driving; and packed snow, mushy snow and sandy snow are only a trifle worse than corresponding dirt roads. Deep snow holds the tires against excessive skidding, while itself preventing undue speed, so that the danger is rather in the way of side-swiping obstacles that ordinarily are easily avoided than in hurling the car in a way that may cause serious collisions.

Any car will skid more or less in mud, especially on banked roads or on hills, and even chains do not absolutely prevent skidding under such circumstances; consequently, it is wise for one of two vehicles meeting in a slippery road to be brought to a full stop. The beginner should remember that without chains, and sometimes even with them, he may spend several hours in a soft sag of a road, and that the grass-plot at the side of the road may be worse than the mud puddle which he is trying to avoid. It is better to make a detour of several miles.

The tendency to skidding is diminished when all four wheels are allowed to run perfectly free. In other words, one should approach any skiddy spot on neutral and apply the brake gradually. Often it is safer to suffer a collision at low speed than to jam on the brakes and skid. For example, it costs less to break the headlights and bend the fenders against the rear of a stopping street-car than to brake suddenly and be thrown

into the track of a rapidly moving car coming in the opposite direction.

Skidding differs for different cars and also for the same car, according to the different speeds, different roadways and grades, and for corrugated or smooth tires or tires plus chains. Strange as it may seem, skidding should be "rehearsed," but very carefully and in an open space. Begin with taking curves and making full stops at very moderate speeds on level dry pavements and roads and far enough from curb (or, kerb, if you prefer) or ditch, so that no great damage may be done. Then gradually work up to more unfavorable conditions of speed, grade, and roadway, so that by experience you will know just what to expect under various conditions and will sense it automatically. Learn, through practice, how much better it is not to steer against the car's tendency to skid—the result of which is analogous to yawing in a boat—as well as how much worse you will make matters by braking, although with a small light car on a slippery pavement, you usually will merely swing sharp around and may even resort to this maneuver to get out of a tight place.

The Safe Way to Drive

There is but one possible way to insure permanent safety in driving an automobile; namely, the driver must grasp the principle that he has to assume the full responsibility himself, and besides must be prepared for the most unexpected, foolish, and irresponsible acts on the parts of others.

All of the few actual accidents and nearly all of the near-accidents that I have had come under this category, and all of them could have been averted—even in view of the uncomfortable realization of what might have been—by due attention to this rule. One is tempted to feel that, if he drives a heavy-enough car at a sufficiently reckless speed, others will flee in terror: BUT—there used to be a driver of this class, and a careful one of the kind, who regularly late in the night drove past my house, with his cutout open and blowing his horn for crossings, traveling at a speed of something like 35 miles an hour. He is doing so no more. Perhaps he reformed spontaneously; perhaps he was arrested; perhaps he was one of four chauffeurs who, in two collisions at our corner, came together with much shattering of glass and metal, both accidents in consequence of the assumption that it was too late for anyone else to be out.

Then, to continue the clinical method:

there was a motor cyclist who tried to cross a street when right-angle traffic had the right of way. It was a perfectly open crossing, but he was running on a cobble-stone pavement, so that every consideration of comfort and economy should have kept him to a slow speed. Undoubtedly this man calculated that it was only a slow coupé-electric coming and that he could get ahead of it; however, the other one mangled his machine, in addition to breaking his femur. What he did not realize was, that the owner of the electric car was a very rich and influential man who not only could afford a costly vehicle of high speed, but who, further, could afford to run it ten miles or so beyond speed-regulations.

Then there was a very nice but not altogether temperate young chap who ran amuck in one of the city's streets. Other vehicles turned off at cross streets, trespassed on private driveways, even climbed over the curb to save themselves from disaster, but this wild driver's hand was unsteady, and, before long, his career ended with his funeral.

Two men were struck at the same time on a railroad-crossing. It was a jerkwater branch of a railroad that even on its main line is the butt of all sorts of jokes as to slow speed and infrequency of trains. However, that time there was a train there at that crossing.

The Important Psychologic Factor

One large factor of safety consists in comprehending what are almost axiomatic principles of psychology and human nature. Country-driving on Sunday and late at night is especially dangerous because of its associated indulgence in alcoholics, especially so far as inbound automobiles from clubs and roadhouses are concerned. A crowded highway is dangerous, not merely on account of the multiplication of chances of danger, but because the kind of people who follow the crowd are, in the aggregate, less intelligent and therefore less careful and conscientious than those whose interests are less popular. U. S. mail-vehicles are generally recognized as highly dangerous, for the reason that, partly as a matter of necessity in making time and partly because their drivers appreciate to the full that the nation is above the municipality, they do not attempt to keep to the right. A secondary reason is, that the bright-red color of mail-wagons is surprisingly near invisible in a faint light and in a mist or rain.

Farmers are proverbially independent and many have not yet quite abandoned their

early antipathy to automobiles, nor have their horses become so universally blasé as city horses. Many of them will not carry lights after dark and insist upon using the middle of the road. They do not realize that, when on foot, they can not be seen by a driver going in the same direction if another automobile approaches with bright headlights. Pedestrians on an unlighted road would be safer if they walked on the left side, as they could then see an approaching automobile. On the other hand, it is only fair to the farmer to remember that he is more likely to be on the road for business, but the automobilist, for pleasure, and that the former is more likely to be the more direct owner of the road, so far as residence and tax-paying are concerned; also, that so far as classes of vehicles are concerned he has priority. The humane man will also recognize that sudden changes in the status of inertia mean strain and suffering to a horse and that for this reason alone he should voluntarily put himself to some inconvenience.

But, aside from such considerations, the general policy of acting as if a possible was an actual danger pays in the long run. For instance, I recollect running at about thirty miles an hour behind another automobile that passed a wagon which got out of the middle of the road just in time to avoid an accident. My first thought was that the driver needed his lesson, but my second, that it was just barely possible that he hadn't learned it. And he hadn't; for, he immediately pulled back into the middle of the road and a little beyond. According to all rules of logic, I should have been perfectly safe in following the first machine without reducing speed, merely sounding the horn, but the rule would not have worked. Once, on a muddy and very convex road, I sounded the horn and tried to pass a buggy to the left, as the law requires, but at that same moment the buggy-driver ahead had reached his private driveway and so suddenly turned squarely to the left athwart the road. Fortunately the collision was not serious, since on such a road we could only crawl along. I was threatened with arrest, though not so much for careless driving as for eloquence in attempting to instil some rudimentary conception of the proper use of highways. A few similar experiences falling just short of actual collision have impressed upon me very thoroughly the conviction that the man ahead is likely to do any conceivable thing at any moment, except the expected.

As already stated for railroad crossings, one is prone at the beginning to be unduly impressed with infrequency of traffic. There is no time of the day or night, no road so grass-grown, no place so deserted that one can afford to regard himself as the only one using the road. This fact should be remembered, both for safety and for convenience. Having to pick up tools and start the car to make way for someone else or oneself having to wait for a picnic party to park its car at the side of the road instead of in the middle of it—with nothing but the middle of such a road—has impressed this lesson. There is a charming road near Buffalo that leads nowhere and which is rough and, if possible, muddy for part of the way. I feel almost as if it belonged to me, because so few persons know of it. But one day—although my machine was in perfect repair, and just because I wanted mental peace and physical fatigue—I went over that road on a bicycle, when I came upon an auto-party of four, who really should have remembered that no road is safe from intrusion and that at times the unobtrusive silence of a bicycle may have its disadvantages.

Eulogy of the Bicycle

In parentheses, it may be worth while to emphasize the fact that the automobile does not, by any means, entirely take the place of the bicycle. Professionally, the latter is often convenient and time-saving for emergency-calls, especially at night, unless, as in Atlantic City, the physician can keep his machine under his front veranda. The wheel is also more convenient for doing numerous errands in a round of only a few miles. For pleasure, it does not, of course, give the radius that the automobile does; still, it enables one to get into and not merely through the country. Given a little more free time, it is far superior to the automobile for sight-seeing, as in a strange city or unfamiliar country, and more particularly abroad, and it has the enormous advantage that any route is ultimately feasible and passable and any spot attainable. Some persons are so thoroughly automobilized that at times they forget the superiority of other modes of locomotion. Two physicians of my acquaintance use their machines to go half a block to mail a letter. Not uncommonly, business men lose time and incur unnecessary expense because they will not take a train.

From the hygienic standpoint, the bicycle is almost entirely free from nervous strain,

especially if one avoids state roads, which usually are uninteresting, dangerous on account of automobile traffic, and liable to cause punctures to any pneumatic-tired vehicle. One can drive and at the same time safely look. The muscular exercise is more wholesomely tiring, but not so liable to require occasional strain. Moreover, it should not be forgotten that the average patient does not need these benefits of the bicycle nearly so much as does the average physician.

The bicycle has a certain educative value. It trains the faculties of observation more broadly than does the automobile. A few years ago, before automobiles were so common as at present, I stopped my bicycle to offer sympathy and possibly help to a more progressive friend in an automobile standing beside the road. He thanked me and assured me that he had merely stopped to enjoy the scenery. That was the first time that I had ever seen an automobile standing still in the country, except for repairs or to enjoy any scenery at a distance from a road-house. And, to this day, one can almost distinguish by the routes chosen, the way of driving, and the places of stoppage those automobilists who have previously been educated by the bicycle.

More Safety Points: Guarding Against Trouble

To return to the consideration of safety. Never go beyond a city line or, at most, be yond a well-traveled interurban route when there is anything out of order with a car, nor with a low supply of gasolin and oil. Nor is this enough. One must, in addition, be able to make repairs of parts that may possibly get out of order, up to the point where it is more economic to rely on expert assistance.

In particular, there should be carried at least one extra outer tire of each size, two or three extra inner tubes, patching-outfit, two or three (or, better, a full set) clean and adjusted and tightened spark-plugs, oil, grease, heavy and light insulated wires, extra electric bulbs (or kerosene, if the latter be used), extra nuts, valve-caps, a few nails and screws, cotter-pins, and the like; besides the ordinary equipment of tools; and all should always be stored away in an orderly way. Be sure always to test the lights long enough before dark to allow for adjustment and repairs or for a change of route if the trouble should turn out to be beyond your skill.

However, do not attempt to carry preparedness too far. A lecturer on obstetrics once said that, if he carried all the equipment advised, item by item, for possible emergen-

cies, he would need an express-wagon; and the same point has been made for the automobile by a recent cartoon representing a man carrying a complete car strapped behind. There is not enough space available for everything that might conceivably be required. One can run without a starting-battery, can get water anywhere, and can prevent freezing by keeping the engine running for short stops or draining the radiator for long ones. No serious harm will come from running a machine without a fan-belt for a moderate distance and with care, to prevent overheating, on low gear, by stopping occasionally. A broken muffler involves only slight risk of fire, many pestiferous joyriders even cutting it out habitually. Ordinary insulated wire of approximately the same size can be utilized to replace broken connections, and insulation can be temporarily replaced by tape or even dry rags or a string.

Help in Time of Trouble

In most parts of the country, one cannot get more than twenty miles from a stock of practically any ordinary part or supply or more than five miles from telephonic communication with a good garage. On a traveled route, some sort of assistance will come along within an hour or two at almost any time. Almost any driver of an automobile will, from kindness of heart or for money, do anything for any other in trouble, although some limit their sympathy and helpfulness to those having machines of approximately the same grade. One sometimes wishes that the automobiles that stop in superabundance to offer lifts to other automobilists deprived of their means of locomotion would more frequently give rides to those permanently without them—a course that undoubtedly would go far to bring about a more kindly feeling.

It is sometimes difficult to distinguish between the cases in which assistance should be regarded as a fraternal courtesy and as a matter of business. For example, a young man on a motor cycle once patched a bad blowout for me, working some two hours in the dark, and he refused any pay from me. On the other hand, I myself have twice been offered money for help. On one occasion, I was in a bathing-suit and alone with a small car, so that I could not feel offended. On the other occasion, I was fairly well clothed and with a companion who addressed me as "doctor," so that it seemed either that the persons whom I befriended should have been

more discerning or that the acceptance of pay for acts of courtesy is more widespread than it should be.

The Question of Insurance

Insurance is an important factor of economic safety, and it can be secured to cover almost every element of danger connected with automobiling, except criminal responsibility. Fire, theft, liability for damages, and a limited form of recompense for injury and death are the usual combination, the total annual premium being a little over 10 percent a year for small cars, and the rate not increasing proportionately with the cost of larger cars. Insurance to cover a member of the family or chauffeur can be secured at a small additional cost. Insurance is usually void if the car is operated by a minor, under any circumstances, or by anyone in the absence of the insured, although professional chauffeurs and repair-men properly licensed are not usually construed as exceptions. It is scarcely worth while, at least for a small car, to pay the premium for full protection against losses under twenty-five dollars. Collision insurance may also be omitted for a small car and careful driver. He is protected as to liabilities, and anyone running into him is liable, so that the actual risk covered by collision-insurance is far less than the premium charged.

All accidents should be promptly reported, both to the police and the insurance agency, although near-accidents and collisions involving no appreciable damage should not be reported to the latter, as such a course gives a possible ground for contesting claims, on the basis of a record of carelessness. Do not deal with any firm or agent that does not pay claims promptly and without quibbling.

Automobiling involves more or less danger from robbers, insane persons, blackmailers, and so on, especially at night and in un frequented places. Somewhere near Erie, I gave a lift to a lame, elderly pedestrian. He rambled on in German about abandoning his family in St. Louis, a murder, getting work somewhere, and ultimately reaching Germany via New York, and his conversation was so incoherent and sanguinary that it seemed no violation of neutrality to dump him near Dunkirk, instead of risking a long ride after dark with him.

Certain joyriders might well look up the exact location of state lines, with reference to the Mann law. This caution scarcely applies to medical readers, but it is worth while to remember that a man driving alone

may render himself open to blackmail from pure kindness of heart. One dislikes to refuse a child, but there is some danger of being accused of kidnapping, in the case of a runaway, or one may, without realizing it, take

a child so far from home that it will be lost returning. Considerable prudence, therefore, is necessary with regard to picking up strangers.

[*To be continued.*]

Suggestions for the Treatment of Sciatica

By FRANK D. PATTERSON, M. D., Marshall, Michigan

AMONG the various chronic ailments that come to the notice of the general practitioner, there is none that requires any more careful insight into its etiology and pathology than does sciatica; for, as we well know, some cases of this disorder will yield to certain therapeutic methods, while the same treatment has no effect whatever toward effecting a cure in others.

In those affections of the great sciatic nerve where there is simply neuralgia, any counter-irritant, such as mustard- and capsicum-plasters or fly-blisters, applied along the course of that nerve, will soon dispel the pain, as also will belladonna; when, however, the condition assumes the character of a true neuritis, then it is not quite such a simple matter to effect a cure. And, unfortunately, there is no very sharp dividing line between neuralgia and neuritis; although in neuralgia the pain is more fleeting and less definitely localized, while that of neuritis assumes a burning or boring character along the course of the affected nerve, and in general is more constant.

Whether the attack be neuralgia or neuritis, the first pathological condition is one of hyperemia along the nerve-sheath. As this develops into neuritis, there arises a serous effusion within the neurilemma, with more or less breaking up of the white substance of Schwann and eventual involvement of the axis cylinders. This, together with a resulting hyperplasia of the connective-tissue elements, from the chronic inflammation, readily explains the loss of response of the muscles governed by the affected nerve to the faradic and sometimes also to the galvanic current, which one meets with in almost every case of sciatica.

Causes and Symptoms

Among the general causes are various constitutional diseases, pressure, traumatism, autointoxication from within or infection from without, and almost always infection in some form or other as an exciting cause.

The first symptom of sciatica noticed is localized pain felt about midway between the great trochanter and the tuberosity of the ischium; this frequently following in the wake of lumbago, there being a steady pain from the lumbar region down to where the great sciatic nerve passes between the two heads of the biceps-femoris muscle. As improvement progresses, the pain emerges into the popliteal space, two of the most tender places being the point of bifurcation into the internal and external popliteal nerves and the point on the external popliteal nerve just beneath the biceps tendon. After a while, the pain becomes more superficial and finally disappears.

The Therapeutic Measures

In every case under treatment, attention must be given to every organ of elimination. Usually cholagog purgatives, such as calomel and podophyllin, are indicated, and frequently such other remedies as colchicine, chionan thoid, and bryonin can be used to good advantage. The condition of the teeth should also be looked into, as pyorrhea not infrequently lights up sciatica and other obscure ailments in remote portions of the body. As overwork and exposure to cold are exciting causes of sciatica, it behooves the patient to keep off his feet as much as possible (absolute rest being most desirable), and most carefully to avoid taking cold.

The correction of a displaced uterus or the evacuation of an overloaded bowel will frequently relieve sciatica caused by pressure. Where the sciatica is aggravated by the pressure of a serous effusion within the nerve-sheath, that condition can be relieved by pushing the apocynin, in order to excrete through the kidneys this fluid that is pressing on the nerve-filaments. This pressure can also be relieved by remedies such as atropine and glonoin, which remove internal congestion by opening the peripheral capillaries. Atropine can be given hypodermically in doses of 1-50

grain or even more, up to the limit of toleration, as indicated by the flushed face and dilated pupils; carefully remembering that patients of a sanguine temperament bear this drug badly.

Atropine is supposedly a deliriant, yet, several times in my own experience have I seen it manifest decidedly hypnotic qualities. By dilating the peripheral capillaries, it tends to produce anemia of the internal organs, brain included; this depletion of the brain, of course, tending to induce sleep; and whether it act as a deliriant or an hypnotic is dependent, therefore, upon whether the cerebral or the peripheral action of the drug predominates.

Thiosinamin Cataphorically Used

Since one of the pathological changes of neuritis consists in excessive connective-tissue growth among the nerve-fibers, chromium sulphate, from 4 to 8 grains three times a day, is indicated. For precisely the same purpose, thiosinamin cataphorically employed, can also be used. Being electro positive, this remedy tends to pass from the anode to the cathode, and in so passing through the redundant connective tissue disintegrates it. The stock solution kept on hand for that purpose is composed as follows:

| | |
|------------------|------------|
| Thiosinamin | grs. 10 |
| Sodium chloride | grs. 5 |
| Glycerin | fl. drs. 2 |
| Distilled water | fl. drs. 6 |

The usual indifferent copper-pad electrode is applied with the cathode over some other portion of the body, usually the abdomen; while the above solution is applied on absorbent cotton to an electrode of some almost incorrodible metal, such as tin or platinum, attached to the anode, the pad being moved up and down the course of the inflamed great sciatic nerve. No electrode of copper or other corrodible metal should be applied with this solution to the anode, as the metallic salts thus given off seriously interfere with the action of the thiosinamin. A current of from 5 to 20 milliamperes, according to the tolerance of the patient, is allowed to pass along the course of the affected nerve for about ten minutes. If possible, these seances should be held daily, but, if not feasible, then every other day. In fact, where the sciatica is not more than a neuralgia, the galvanic current with any ordinary copper electrode attached to the anode and passed along the course of the great sciatic nerve will be of great service, and is especially indicated

where the muscles are irresponsive to the faradic current.

The High-Frequency Current

However, the most satisfactory treatment in my hands thus far has been the body-vacuum-tube attached to the Tesla portion of the high-frequency coil. One does not, for this purpose, require any of the more elaborate forms of high-frequency apparatus on the market, for the ordinary portable style will answer; although, where there is extremely high blood pressure and hardening of the arteries in patients past middle life, the D'Arsonval attachment of the ordinary portable high frequency machine lacks the electric potential necessary to make much of a fall in blood pressure. However, the vacuum tubes attached to the Tesla portion of the portable high-frequency machine accomplish the purpose just as well as when attached to some of the larger machines.

The average commercial current is an alternating one. Where the commercial current is direct, special apparatus is required to convert it into an alternating current, in order to be able to use it with a high-frequency coil. A commercial current usually alternates about 60 times a second, and is what is called a 60-cycle current. The average lamp-socket is one of 110 volts, although there are in use sockets of double that voltage, in which case a comedown transformer is necessary in order to prevent the burning-out of the delicate portions of the coil that are intended for only the 110-volt socket. In passing through the coil, the voltage is increased from 110 up into the thousands, and the alternations likewise are increased from 60 up to several thousand. Were it not for the extreme frequency of the alternations, the resulting voltage would render such a current instantly fatal.

Benefits of High Frequency Currents

The faradic current—an alternating current of low frequency—causes muscular contractions and, if sufficiently strong, also sensations of pain. As the frequency increases, the pain ceases, but muscular contractions, instead of affecting single muscles, throw whole groups of muscles into tetanic contraction. When the frequency increases to about 10,000 oscillations per second, both muscular contractions and pain cease, but, instead of the muscles as a whole being made to contract, these high-frequency currents produce a general massage of all the individual cells of the body, thereby improving nutrition, increasing the oxygenation of the blood, assist-

ing in the throwing off of waste and improving metabolism in general. Besides this general massage, the ozone given off from the vacuum-tube also acts as a germicide.

The portable high-frequency apparatus has on it a spark-gap, whereby the voltage can be regulated by the pulling out and pushing in of a rod, and another gap, whereby the frequency is regulated, as well as a switch, whereby the commercial alternating current can be turned on into the coil in varying degrees of intensity. In order to prevent burning-out of a fuse and shortcircuiting the machine, great care must be taken, before turning on the current, not to allow the rod of the spark-gap to come into electrical contact with the opposite copper post; and for the same reason the copper surfaces of the frequency-regulator should not come into contact while the current is on.

Care must also be taken not to allow the cord connecting the coil with the handle of the vacuum-tube to come into contact with one's own or his patient's flesh, as severe shocks and burns will thus result, and also this cord should not come into contact with any metal surface, as by so doing the insulation would be burned through.

The vacuum-tube must come in direct contact with the skin over the affected nerve, as thereby a stronger current is tolerated

than could be if administered through the clothing, in the latter instance there being the external irritation of a spark the thickness of the clothing. The vacuum-tube is applied directly to the skin over the nerve, as strong as the patient will tolerate, for from ten to twenty minutes daily. If the patient cannot come every day, he can still be treated to good advantage if he comes every other day; but irregularity of these treatments is inimical to the best results. Sometimes after the first few treatments the increased flow of blood, due to the high-frequency current, will aggravate the symptoms and lead the patient to believe that the treatments are making a bad matter worse, but, if he is induced to continue, he will soon come to an altogether different conclusion. If the blood pressure is not excessively high, a few sparks over the lumbar region are also of service.

There is nothing about any form of electric treatments that will in any way interfere with the patient's receiving any indicated medication. If these treatments are kept up for from six weeks to two months, and, as toward the last improvement is distinctly in evidence, instead of suddenly breaking off these treatments, longer intervals may be interposed, the patient will usually at the end of that time find himself permanently cured of this troublesome ailment.

America the Beautiful

By KATHARINE LEE BATES

O beautiful for spacious skies,
For amber waves of grain,
For purple mountain majesties,
Above the fruited plain!
America! America!
God shed His grace on thee
And crown thy good with brotherhood
From sea to shining sea!

O beautiful for pilgrim feet,
Whose stern, impassioned stress
A thoroughfare for freedom beat
Across the wilderness!
America! America!
God mend thine every flaw,
Confirm thy soul in self-control
Thy liberty in law!

O beautiful for heroes proved
In liberating strife,
Who more than self their country loved,
And mercy more than life.
America! America!
May God thy gold refine,
Till all success be nobleness,
And every gain divine!

O beautiful for patriot dream
That sees beyond the years
Thine alabaster cities gleam
Undimmed by human tears!
America! America!
God shed His grace on thee
And crown thy good with brotherhood
From sea to shining sea!

Recreations for the Aged

By I. L. NASCHER, M. D., New York City

EVERY form of activity—mental or physical, voluntary or involuntary—must be followed by a period of rest for recuperation. Even the heart has a period of absolute rest in each of its cycles. Prolonged muscular activity produces fatigue, and, if further continued, muscle exhaustion, with attendant loss of muscle irritability, results. Prolonged mental activity gives rise to brain-fag, and, if continued, mental exhaustion, with attendant inability to think, follows. In muscle exhaustion, the muscle must rest; no power of the will is able to move it. In brain exhaustion, the brain must rest and it is impossible to keep it awake.

However, there is in the organism an inherent tendency to activity of mind and body, so that, when the brain and muscles are sufficiently rested, when muscle irritability has been restored and the contracted neurones have regained their normal state, it requires a powerful effort of the will to maintain either in inactivity for even a few minutes. It is almost impossible to produce a mental blank by force of will, and likewise it is extremely difficult to maintain a muscle at complete rest for even a few minutes. Artists' models find it extremely irksome to maintain a prolonged pose, even one that permits of muscular relaxation; so that, unless one is trained to this restraint, a few minutes of such enforced inactivity will cause restlessness. Thus the necessity for physical activity is evidenced by the unconscious crossing and recrossing of the legs, scribbling on paper, twirling the fingers, automatic movements of the infant, and even changing one's posture during sleep.

Complete relaxation is impossible, except in pathologic conditions, as, for instance, in deep narcosis, when the motor centers are inhibited. Any relaxation of one set of muscles causes contraction of the opposing set, and in a short time the contracted set will demand relaxation. Psychologists tell us that, except in complete mental exhaustion, the healthy mind continually is active, even though in sleep it does not receive external impressions, or, receiving them, it does not respond to the stimulus except by unconscious reflex action.

Inasmuch as, after fatigue has set in, mental and physical activity can be carried on only with difficulty and distress, persons

quit working when the stage of fatigue has set in: they rest or sleep or take up some occupation that does not involve the tired-out tissues. If the latter, substitutive task is of a pleasureable nature, it constitutes recreation. We do not know why the sense of pleasure has a beneficial effect upon the organism; we do know that it acts as a mental and physical stimulus and that under its influence more work can be done than when this agreeable stimulus is absent.

Recreation should be the antithesis of the work that makes it necessary. On this principle, mental work calls for physical recreation, physical work calls for mental recreation. Sensuous recreations may take the place of either whenever the tiredout tissues are not involved.

In selecting the appropriate recreation, we must consider the mental and the physical capacities of the individual, as well as his tastes, and also the character of the work that gave rise to the need for recreation. In the aged, we also must consider their sight and hearing, besides certain mental and physical peculiarities. To the latter, I wish to call particular attention, for, failure to do so often is responsible for irrational recreations provided for the aged, with the consequent disappointment for those who aim to please the old folks but ignominiously fail.

It is a common occurrence, for instance, that young people take the old folks to a theater; however, very soon after the performance has begun, the old people are fast asleep. The same with, say, the circus or lectures. They take the old man to view a parade, but in a few minutes he will want to go home. The old lady may like the outing undertaken, but she will want to stay at the foot of the first hill encountered. The young who do not know the limitations to the mental and physical capacity of the aged frequently urge upon the latter what they intend as recreations, but which in fact to them constitute tasks, even laborious work.

Aged persons, it must be remembered, cannot do much physical work, while mental tasks soon bring on brain-fag. Still, they require recreation after such efforts, and, as recuperation in the aged takes place much slower than earlier in life, the recreation must be one not rapidly causing fatigue. A given exertion that a young person is able

to continue for hours may tire out an aged man or woman in a few minutes; so that, in selecting physical recreations for the aged, we must choose those which permit combining mild exercise with frequent periods of rest. Mental recreations should not be such as to confuse the mind or entail serious thought. The reason why the old man dozes off at the sermon, lecture or play is not that he is inattentive, but his unduly strained attention brings on brain-fag.

Interest in sensuous recreations, those that appeal to the eye and ear, wanes with failing eyesight and hearing, but this interest can be maintained through proper attention to these defects. Moreover, the sensuous recreations are the forms most agreeable to the aged, provided they can be enjoyed without the discomfort of straining the eyes and ears.

Why the Aged Doze Off

Dividing the forms of recreations into three classes, namely, physical, mental or intellectual, and sensuous, we find that most of them belong to more than one class. On the other hand, the best forms for the aged are those belonging to one class alone.

Take the drama, for example. In the ordinary play, the plot requires intellectual activity, the acting affects the emotions, while sight and hearing must be alert in order to convey properly the impressions to the brain. The ballet, on the other hand, produces a pleasant visual impression without requiring any intellectual activity; the impression is similar to that produced by a display of fireworks. While the ballet is agreeable, owing to the harmonious and rhythmic motion, the dance, with its riot of motion, quickly confuses the senile mind and thus causes brain-fag. In the song, there is an appeal to the intellect or emotions, and the melody produces an agreeable auditory impression. In music, there is the auditory impression, although there also may be an intellectual or emotional reaction owing to the association of the composition with a song or perhaps to the character of the air itself. Familiarity with a play, song or composition lessens the mental strain required to follow and remember it.

When an aged man goes to the play with a complicated plot, he will fall asleep, because the intellectual activity necessary to follow the plot produces brain-fag; the reaction following stimulation of the emotions is mentally and physically depressing, and, unless he has a good seat, he must make a conscious effort to see and hear well, and

this is a task which itself requires rest. If the sight and hearing are good, visual and auditory impressions will not tire, unless prolonged or there is a complexity of sights or sounds that will make for mental confusion. The old man will be able to watch a one-ring circus for hours; let him try to follow a three-ring circus and he becomes confused in a few minutes. In like manner, the production, at grand opera, of arias, by the finest of singers and orchestras, will soon bring on brain-fag, while simple songs or melodies will be grateful.

Importance of Sensuous Impressions

Sensual as well as sensuous impressions play a part in the recreations of aged men. We need only refer to the ancient joke about the baldhead row in the theater where there is a chorus of pretty, shapely women. We may try to delude ourselves as much as we please with the idea that the pleasure a man finds in looking at a bevy of pretty women on the stage is purely esthetic, we cannot change the fact that that is nothing but purely conscious self-delusion. The old man who takes a front seat in the theater does not try to deceive himself, although he may give poor eyesight as an excuse.

With advancing age, the mental faculties are not as alert as formerly and the old man does not grasp readily humor depending upon a quick appreciation of a pun or *double entendre*. The farce and extravaganza that are replete with ludicrous situations and funny incidents are relished, while the delicate humor of the society-play is wasted upon him. To the simple minds, the broadest kind of farce will appeal most strongly, especially if there are antics of the Punch-and-Judy order interspersed with colloquial puns.

Aged opera-goers find the greatest pleasure in plays with which they are familiar, while new compositions will confuse and bring on brain-fag. Those who are fond of music and song find a far greater recreation in the lighter musical plays. The musical comedy—with its gauzy plot that requires little mental effort to follow, the freedom from strong emotional incidents, the melodies and pretty stage pictures, which appeal to the senses—is perhaps the best form of dramatic recreation for the aged. Here, again, we must consider the sight and hearing of the individual, and, if these are impaired, he must get a front seat to enjoy the play. But many aged persons who would find a grateful recreation at the musical comedy find the

expense of front seats prohibitive, and to such I should not hesitate to recommend a front seat at one of the better burlesque theaters. Many of the performances, given at these theaters under the name of burlesque, are simply musical comedies with farce incidents, conducted on a cheaper scale.

In all forms of the drama, the tastes of the aged person must determine the character of the performance. Emotional plays, however, frequently produce depression, and a play with a sad ending may produce a prolonged melancholic state. The aged like revivals of plays, and these do not require the mental efforts that must be exerted to follow a new play. Motion pictures depicting plays with intricate plots requiring constant attention soon tire the mind. Comedy pictures are generally relished; however, this form of amusement is generally detrimental to the aged, on account of the eye-strain produced by the flickering pictures; while, besides, in the small crowded houses the air becomes foul and stagnant and affects the lungs.

Lectures and Reading

A lecture is no recreation for an aged person, unless it is frequently broken by illustrations. If there are no breaks, the aged soon fall asleep through excessive attention, with consequent brain-fag. I know from personal experience that aged physicians generally find it difficult to follow a paper taking from fifteen to twenty minutes to read. They either forget the early part of the paper or toward the end the mind becomes tired and thus they can pay no attention to the latter part.

Reading is an excellent form of mental recreation, but it is no recreation from a regular task already involving reading or looking at books. We find two classes among aged readers: those who read a short time, remember what they read, and must then stop because of brain fag; a second class, those who read for hours, forget what they have read a few minutes before, and, if they fall asleep while reading, have, upon awaking, no recollection of what they did read. The former read the more serious works and retain impressions of what they have read. Those of the other class take up light reading, and the impression produced is but momentary; it is no mental task and does not produce brain-fag. Reading is a recreation from mental labor involving calculation, while card playing is a mental recreation from

labor involving reading and reasoning, but not labor involving calculation. Card-games which require much thought or memorizing soon tire the player. Chess playing likewise soon tires an aged individual, unless he is an expert and has a weak opponent. When other games of a similar kind are taken up as recreations, the mental capacity must be considered.

Physical Exercise a Rest From Mental Exertion

The best form of recreation from mental labor is physical exercise. Here, again, we have to deal with the physical capacity of the individual. An old man cannot take part in the strenuous athletic sports or gymnastic exercises, although many aged persons keep up systematic calisthenics. This, however, is taken up as a routine exercise and not as a recreation. Golf, croquet, outdoor bowling are all good physical recreations for the old man. Fishing, when the fish bite, is a most enjoyable recreation, and it can usually be graded, from the lazy fishing for flounders from a flat-bottomed moored rowboat to the more strenuous fishing for pickerel and trout in inland waters and the blue-fish and larger game-fish in the ocean. Hunting for small game is good recreation as long as the arm is steady and the sight is good.

Further, witnessing athletic and other sports constitutes a sensuous form of recreation in which the emotions are involved. Whether it prove beneficial or detrimental will depend upon the temperament of the individual. If he becomes greatly excited over the outcome of a race or game, it will do him no good to witness it. If he is naturally cool and accustomed to such races or games, it will do him no harm. The presbyopic eye does not readily adapt itself to varying distances, and this spoils the pleasure of seeing a horse-race or any other race in which objects at various distances must be seen at the same time.

Walking should be taken up, not as a recreation, but as a routine exercise. As the aged sometimes become absentminded and sometimes suffer from vertigo, they should have agreeable company on their walks. For the purpose of recreation, the best walks are those taken in unfamiliar places, with mild changes of grade and frequent opportunities for rest. Pleasant company is indispensable on such walks. Aged persons sometimes dance as a recreation, more often to show that they are still spry and active.

If they have kept up these terpsichorean exercises from earlier life, moderate dancing will do them no harm if they stop as soon as

dyspnea, palpitation or fatigue set in. How ever, if one has not danced for years the exertion may be speedily fatal.

The Emergency Treatment of Poisoning

Practical Suggestions for the General Practitioner

By SAMUEL C. BEACH, M. D., Evanston, Illinois

[Concluded from page 340, April issue.]

IN THE preceding article, the various modifying influences or conditions produced by states of the body at the time a given poison is taken were mentioned; also the emergency treatment—consisting in the administration of the various household remedies that are nearest to hand and most applicable for antagonizing the action of the poison. The physician will always have his hypodermic case with him, and, consequently, have available a considerable number of antidotes on which to rely; while, in addition, he is likely to find in the house flour, starch, vinegar, ammonia, whiting, bran, wall-plaster, and dishwater. This list of articles (more or less complete) should provide him with quite an assortment to work with; moreover, in case he is at some distance when the call reaches him, he can tell the anxious relatives over the telephone how to utilize these makeshifts pending his arrival.

The Needful Universal Antidote

However, it is decidedly advisable for every physician always to carry with him a universal antidote, one that may be given in those cases where the nature of the poison is not definitely known.

The "universal antidote" that has attained the greatest reputation is composed as follows:

| | |
|--------------------------------|---------|
| Pulverized charcoal (U. S. P.) | 2 parts |
| Tannic acid | 1 part |
| Magnesia (calcined) | 1 part |

This powder is kept in a tightly closed bottle. The dose, at haphazard, is a teaspoonful stirred into a glass of water. The charcoal acts physically, absorbing the alkaloids and various other poisons, thereby retarding their absorption into the system; the tannic acid precipitates and thus renders insoluble the alkaloids and also various metallic poisons; lastly, the basic magnesium oxide neutralizes acids, while, next to ferric hydroxide, it is the best antidote we have for arsenic.

A dose of this antidote (in a doubtful case) should be given at frequent intervals. Also, the stomach should be washed out shortly after each dose, except perhaps the last one, which may be allowed to remain.

It is the absorbed poison which does the most harm, usually; therefore, elimination should be promoted in every possible way through the skin, the kidneys, and the bowels. Water should be given freely, also diuretics, and heat be applied to the back in order to stimulate the action of the kidneys and assuage irritation. Frequent catheterization should be done. Finally, physiologic saline solution should be administered by rectum, intravenously or subcutaneously. This latter method was used in a case where 8 grains of morphine had been taken and the usual approved methods of treatment had been tried without benefit; but when the injection of the saline solution was given, the patient improved rapidly and recovered completely. The action seems to be exerted in the way of promoting elimination.

Arsenic

Arsenic is found in the rat-poisons and various paris-green preparations on the market, and it, therefore, either by accident or design, is used as a poison more often than almost any other drug. Arsenic was formerly used in the manufacture of wall-papers and certain aniline dyes, but its use for this purpose has been discontinued. In any of its forms, it may produce poisonous effects, these being classed under the three heads of acute, chronic, and nervous.

Acute Poisoning.—The symptoms of acute arsenic poisoning usually appear within an hour or two, but may be delayed by the action of opium or alcohol. An acrid, burning sensation is felt in the throat and nausea and vomiting soon follow. There is much depression, with a severe burning pain in the stomach and bowels, which latter become tender and sensitive to pressure. Intense thirst, only aggravated by drinking water,

then occurs, and, later, vomiting, the latter often bilious and bloody. Purging is severe and accompanied by much tenesmus. The stools are like those of cholera, bloody and mixed with mucus. Swallowing soon becomes difficult, the tongue becomes dry and furred and there is frontal headache, dizziness, photophobia, and general depression. The urine is scanty or suppressed, the heart's action becomes irregular, the skin cyanosed, and the patient sinks into coma, ending in death, possibly under convulsions.

It is estimated that arsenic has caused more deaths than any other poison except opium and its derivatives. It is so cheap and easily obtained—as almost no restrictions are placed on its sale—and is almost tasteless when mixed with food, that naturally it is more often resorted to. The use of arsenic by undertakers, for the purpose of preserving corpses, makes the detection of the criminal poisoner difficult and sometimes impossible.*

Arsenic is placed on the market in the form of rough-on-rats, buffalo carpet-moth annihilator, tough-on-mice, fly-papers, and various other vermin exterminators.

The fatal dose of arsenic has been variously estimated, from 2 grains of the white arsenic up to 60 grains.

Treatment.—Arsenic has the honor of having named for itself the only official antidote provided by the U. S. Pharmacopeia—the ferri oxidum hydratum cum magnesia. This is given to convert the arsenic into ferric arsenate, an almost insoluble compound.

Give the antidote at once, then thoroughly wash out the stomach. This must be done carefully, and repeated, inasmuch as there is a tendency for arsenic to stick to the walls of the stomach. It is a good plan also to give hot milk and water repeatedly, washing out the stomach after each administration. When you *feel sure that all the arsenic has been removed*, give a final dose of the antidote; and this should be left in the stomach for a time.

In an emergency, the antidote may be extemporaneously prepared by mixing tincture of ferric chloride with magnesia and giving the whole mixture as it is. Or, ammonia water may be used in place of the magnesia; but in that case the mixture should be strained through a cloth before giving, in order to remove surplus ammonia.

Chronic Poisoning.—This will take place when for any reason the administration of

arsenic has been kept up too long or when the patient has an idiosyncrasy against the drug. Its first signs are: puffiness of the lower eyelids, looseness of the bowels, and general edema. The discontinuation of the drug will allow of elimination of the portion already taken. It must not be forgotten that a certain tolerance for the drug is established by continued use; so, inquiry should always be made as to whether it has ever been used before. The arsenic-eaters of Styria (lower Austria) and of India take from 1-2 to 2 grains once a week for years, in order to increase their endurance, and they never suffer poisonous effects from this practice.

Cocaine

Cocaine is taken to produce a pleasant (?) effect or excitement, a form of intoxication, the subject becoming mentally stimulated and nervously excited; but he soon finds it impossible to go to sleep and gradually requires more and more of the drug to produce an effect. It is at first a cerebral, cardiac, and respiratory stimulant; but these effects are followed by a corresponding depression, which, if severe enough, may call for treatment.

Acute poisoning begins with dryness of the throat, tongue, and nose, faintness and nausea, dilated pupils, talkative nervous excitement, and rapid breathing. This is followed by the stage of depression, in which the breathing is shallow, the heart's action rapid and weak, and the face pale; then follow surface anesthesia, muscular twitchings and paralysis from overstimulation. Death is usually caused by paralysis of the respiratory apparatus.

Treatment.—If the patient is seen in the first stage, give adrenalin chloride cautiously—this has been followed by excellent effects in most cases. Ammonium carbonate, nitroglycerin, and strychnine are useful. Artificial respiration should be practiced when indicated. Of all the antagonists, morphine seems to act more favorably and quicker than any other.

Habitual users should be deprived of the drug at once, and completely. No harm will follow, while gradual reduction of dosage has been found to be almost impossible; although, if you can secure the confidence of your patient, this can be done. Preliminary cleaning out by means of cathartics, hot baths, and diuretics, is of value. Tonics, especially arsenic, have been found to be of value in assisting regeneration. Finally, do not lose sight or complete supervision of

*Various governments, as some of our states, now prohibit this use of arsenic. Ed.

your patient for at least six months, or even one year, as relapses are common.

Coal-Tar Analgesics

Acetanilid, antipyrin and *phenacetin* may be considered together, inasmuch as their action is much alike and they all form the basis for headache-tablets and -powders. All three are heart depressants, and large doses are followed by chilliness, nausea, vomiting, weak and slow pulse, cyanosis, and eventually death.

Treatment.—After washing out the stomach, stimulants notably ammonia, strichnine, atropine or caffeine—should be given. Apply heat to the body and extremities. Oxygen inhalations or saline infusions may be necessary in severe cases.

Formaldehyde

Formaldehyde, or *formalin* (which latter is the usual 40-percent solution in water), has been a cause of poisoning both by inhalation and by swallowing. Inhaled, the vapor is a violent irritant to the lungs, while either inhaled or swallowed it produces suffusion of the eyes, congestion of the mucous membranes, and staggering gait and stupor lasting many hours. Later, changes in the liver and kidneys have followed, in severe cases amounting to necrosis. It hardens and dries tissue with which it comes in contact, and this effect is seen when it has been swallowed. Degenerative changes in the blood have followed even the continuous use of milk or other articles of food in which this agent has been used as a preservative.

Treatment.—Inhalation or internal administration of ammonia water or of the gas immediately destroys the formaldehyde. This must be done cautiously, however, as the remedy is itself irritating.

The Mydriatics

Belladonna, stramonium, and *hyoscyamus*—these three drugs and their alkaloids. (atropine, daturine, hyoscyamine, and scopolamine) may be considered together, since their actions are nearly identical.

The one prominent and characteristic effect

of these alkaloids, that of dilating the pupil, serves to class them as mydriatics. Their poisonous effect is shown by dryness of the mouth, throat, and skin, dilated pupils, and a wakeful, talkative delirium. A scarlet rash may appear on the skin. The pulse is rapid and wiry, the respirations are deep and quickened, and there is increased temperature. These symptoms are followed by picking at imaginary objects, fall of temperature, rapid shallow breathing, stupor, and finally death by asphyxia.

Treatment.—Wash out the stomach with a tube, as emesis is difficult to produce. Pilocarpine or morphine, hypodermically, may be used, but with caution, as their action is variable. Practice artificial respiration persistently. Apply cold to the head.

Aconite

Aconite poisoning may occur from mistaking the root for horse-radish or from taking some of the medicinal preparations. The symptoms consist in a sensation of tingling and numbness in the lips, tongue, and throat, this soon becoming general all over the body. There is nausea, but vomiting is not usual, as the nerves of the stomach are paralyzed. Lowering of temperature follows, with great muscular weakness, and the skin is covered with a cold, clammy sweat. Death finally comes from cardiac or respiratory failure.

Treatment.—Give atropine and digitalis as physiological antidotes, while using the tube to wash out the stomach. Keep the patient quiet and apply heat to the body.

Gelsemium

The most prominent symptom of poisoning is muscular weakness. The patient can hardly open the eyes or close the mouth. The heart is profoundly depressed and the pulse is slow and feeble.

Treatment.—Morphine and atropine combined are given hypodermically, and the tube is used to wash out the stomach carefully, using some tannin solution when possible. Strychnine and digitalis may have to be given; also external heat applied to the body.

[To be continued]



What Others are Doing

AS TO WAR-PSYCHOSES

In these turbulent days we read much about the baleful effects of the war upon the mentality of the battling soldiers—men gone mad in every degree of intensity, and suddenly, for a few days or weeks or some, perhaps, incurably.

However, in the opinion of Doctor Weygandt (Medical Society of Hamburg: *Muench. Med. Woch.*, 1914, p. 2315), there is, contrary to current belief, no such thing as a real war-psychosis. Whenever such attacks of insanity occur in the field, they are based upon an existing predisposition and merely become active through the nervous strain and exhaustion to which the men are subject.

DIETETIC TREATMENT OF CARDIO-VASCULAR DISEASE. THE "KARELL TREATMENT"

In the acute form of heart affections, Satterthwaite (*Interst. Med. Jour.*, Jan., p. 7) says that nothing but fluids should be given. If milk is well tolerated, it may be taken to the amount of 1 1-2 to 2 quarts a day. Some prefer buttermilk, and Bulgarian sour milk is popular. The selected form of milk food may be diluted with Vichy or some alkaline water when plain milk is not well tolerated.

The Karell dietetic treatment, which has been employed by Lenhartz in his clinic, in Hamburg, for eighteen years, has met with much favor. During the first six days of this treatment, 7 ounces of milk, boiled or raw, hot or cold, is given at 8 a. m., 12 m., 4 p. m., and 8 p. m.—a total of 28 ounces daily. During this period, no other aliment is allowed. During the following two to six days, one egg is allowed at 10 a. m., and zwieback at 6 p. m.; afterwards two eggs and bread; and, later, a little chopped meat, vegetables or rice pudding, until at the end of the twelfth day the ordinary diet is resumed. During this form of treatment, the bowels should be kept open.

The fundamental rule in the dietetic treatment of cardiac disease of Satterthwaite is that the diet should be sparing. If the patient

is kept in bed, food should be given at intervals of two to four hours, and the last meal of the day should be taken not less than two or three hours before retiring. Great care should be taken to avoid gastrointestinal disturbances, remembering that red meats and carbohydrates (which cause fermentation) are the chief cause of alimentary trouble.

Except in emergencies, the patient should be given no alcohol or malt liquors, and coffee and tea should be prohibited, as a rule. Water should be taken freely if there is an associated lithemic condition, which is likely to be the case; but it must be remembered that, by adding to the quantity of circulating fluid, we are throwing an additional burden upon a weak heart.

SEVERE ANEMIAS IN CHILDREN

Severe anemias in children not infrequently are a sequel to infectious fevers, concerning the nature of which a limited number of hematologic studies have been conducted, at the University Children's Clinic at Erlangen, by Ernst Stettner. These cases of splenic anemia, the result of a rapid degeneration of the hemic elements, according to the author (*Jahrb. f. Kinderh.*, Bd. 80, II. 5), are amenable to treatment, the aim of which must be energetically to oppose to the pathologic process a vigorous regeneration of the hemopoietic mechanism; the prognosis depending entirely upon the relative severity of the affection.

As his greatest therapeutic aid in combating this degenerative process, Doctor Stettner considers sunlight (or, of course, its artificial substitute); to which may be added cautious hydriatic measures (the nature of which, however, is not hinted). Sometimes the actinic rays have proved beneficial. Among medicinal agents, arsenic and iron are to be tried. The diet must be a light mixed one, never onesided; consisting of vegetables, with not too much meat.

Thus, we are assured, even the most severe forms of such splenic anemia can be arrested during childhood, and a complete cure effected. Extirpation of the spleen,

in a few extreme instances, has been followed by satisfactory results; still, this is a measure not without considerable danger.

OIL OF TURPENTINE HYPODERMICALLY IN ZYMIC DISEASES

Péhu and Dillon have been using, on a large scale, plain oil of turpentine, hypodermically administered, in diverse diseases caused by microbic parasites, principally in children, and, as they assert (*Nouv. Reméd.*, 1914, p. 194; cf. *Ther. Monatsh.*, 1915, p. 219), with highly gratifying results. The authors employ this medicament principally in bronchopneumonia—primarily and secondary, especially after measles and diphtheria—but also in the infectious generalized forms of disease, including measles, scarlet-fever, complicated diphtheria, erysipelas, tuberculosis.

As a rule, these injections of oil of turpentine—which are declared to be absolutely [?] without danger—were found to mitigate the fever, the temperature generally dropping on the very first day. However, the most satisfactory results were attained in cases of true bronchopneumonia.

We should expect these injections to be very painful, but no information is given on this point. What reader of CLINICAL MEDICINE can enlighten us?

COLLARGOL INJECTIONS FOR GONORRHEA

Endless, almost, says V. L. Neumayer (*Muench. Med. Woch.*, 1915, p. 423), is the number of antisepsics, particularly silver compounds, that find application in the treatment of gonorrhea, but one there is about the use of which in this infection he never heard or read; and this the very one that virtually alone, in the era of asepsis, has been able to maintain itself for use upon the tissues.

"I mean the collargol of Crédé," Neumayer continues, "and this preparation thus held its own solely by virtue of its being so very free from irritating qualities, and, yet, such a relatively powerful germicide. Moreover, collargol absolutely does not precipitate albumin. In fact, its nonirritant nature is so pronounced that W. v. Oettingen (in his book on military surgery) relates that he feels no compunction about inserting the tablets of this substance into the injured brain-substance."

"But, the author argues further, "all these are properties that particularly seem to

recommend collargol for the treatment of gonorrhea. Assuredly, through its presence, no gonococci can escape its germicide action by being enclosed in coagulated pus or tissues; for, no albumin precipitation takes place."

Doctor Neumayer, serving in the Austrian army in Bosnia, did not have at disposal the necessary supply of the material; however, in the few instances in which he has tried it in the case of soldiers, the results obtained were gratifying, while the subjects were greatly pleased by the absence of irritation produced by the injections. He utilized solutions of 2- and 3-percent, dissolving the handy tablets in sterile water.

SUCCESSFUL TREATMENT OF GAS PHLEGMONS, AND SUGGESTION FOR PROPHYLACTIC VACCINE

Since the European conflict developed into trench-warfare, tetanus and gas-phlegmons have occurred in unheard-of frequency, so that reports on the experience with these deadly complications fill all medical literature. Out of the mass of these, we pick one dealing with gas-phlegmons, contributed to the *Muenchener Medizinische Wochenschrift* (1915, p. 1027) by Professor Fessler of a Bavarian military hospital, because of certain suggestions that seem worthy of special attention. We will not stop to note his particular method of managing this form of wound infection, but want to call attention to his positive assertion that since its adoption (in a large experience) he has not lost a single victim, while at the beginning of his work in the hospital the deaths were many, often occurring by the fourth day.

Taught by sad experience, Fessler—contrary to the present teachings, that bullet-wounds must not be meddled with—now systematically and carefully examines daily all wounds inflicted by bullets or shrapnel (when contamination by soil is assumable), both as to the nature of the secretion and to detect any gas bubbles. Then, at the least suspicious signs—malodorous pus and more than traces of gas bubblings, besides reddening of the skin and painful induration—he cuts, deep and long, laying the infected area wide open. And, decision must be prompt, for, a delay of but a few hours may prove fatal. Further treatment and amputation are questions of the conditions revealed; however, filling out the lesion with balsam of Peru now constitutes a favorite procedure with the

author, while aeration and exposure to the sun's rays are helpful.

The most dangerous period is from the second to the fifth day after the wounding. The question of immediate amputation will depend upon the state of the heart and kidneys and the patient's general condition.

In this way, gas-phlegmons can be prevented from spreading—with the inevitable dire results—and the necrotic tissues will be cast off rapidly, so that inside of a week healthy pink granulating surfaces will be seen.

Another interesting feature of this article is the suggestion made by Professor Fessler that attempts to develop an immunizing vaccine or serum against this infection decidedly are in order, seeing that success has been attained in this direction against tetanus—an infection also derived from the soil.

As to the latter, Fessler testifies that he has not witnessed a single attack of this horrible concomitant of the trench-warfare in northern France (with its clayey soil) since he made it a practice to give every wounded soldier under his care a prophylactic injection of (German) tetanus-antitoxin. It certainly does seem that an antitoxin or a bacterin could be produced; the author suggests an animal-serum derived from the bacillus perfringens.

FORTY-SIX CASES OF PELLAGRA TREATED WITH SODIUM CACODYLATE

A report of 16 cases of pellagra treated with sodium cacodylate, this being the only medication, is contributed by B. H. Booth to *The Southern Medical Journal* (see February, 1916, p. 124). No change was made in the patients' diet, work or environment, and the improvement is therefore ascribable to the arsenical preparation and to this alone. Doctor Booth injected the sodium cacodylate deeply into the muscular tissues in 7-grain doses, at intervals of about a week. The dose to children was adjusted to the patient's age. In 1914, 16 cases of pellagra were treated with this drug, and in 1915, 30 cases. There has been only one death. All of the remaining patients, Doctor Booth reports, are now apparently well at this time so far as he can ascertain. In not one of the 16 cases treated in 1914 has there been any symptom of return.

While Booth believes that a faulty diet is a predisposing cause of pellagra, in this respect agreeing with Goldberger, he is not inclined to consider this the only cause, believing that

the disease is caused by an infectious organism of some kind. He does not pretend to say whether the sodium cacodylate acts directly on this organism, or simply promotes the nutrition so that the body is better able to withstand the attack of the infectious agent. However, he believes that the arsenic acts in both ways. At any rate, the improvement is so manifest and so rapid that he looks upon the cacodylate as a specific.

THE TREATMENT OF THE DIPHTHERIA CARRIER

Now that we know that diphtheria bacilli are frequently carried in the secretions of the throat and nose in otherwise healthy individuals, it is becoming a problem as to how we should treat cases of this kind. From an editorial in *The Journal of the American Medical Association*, we learn that 4 1-2 percent of the patients admitted to the scarlet-fever wards of the Willard Parker Hospital, New York, were diphtheria-bacilli carriers, and in one-half these cases the bacteria were virulent. It is, however, a relief to learn that the organisms grown from carriers are very often nonvirulent, and that these non-virulent diphtheria bacilli are harmless and not to be feared. We can determine whether or not the organisms are of the virulent type by simple tests upon guinea pigs.

When, however, the organisms are found to be of the virulent form, it is no easy matter to destroy them. The latest remedy suggested is iodized phenol, advocated by Ott and Roy, containing 60 percent of phenol and 20 percent each of iodine crystals and glycerin. The application of this mixture is slightly painful for a few moments, producing a superficial scar, which disappears in a day, leaving a reddened, clean surface which soon becomes normal. Thirty-five percent of the carriers on whom it was tried were cured by one application, twenty-nine percent by two applications, and twelve after three. In only one case were more than six applications required.

Hektoen and Rappaport advised the local application of powdered kaolin, this substance acting mechanically and serving to remove the bacilli from the nose and throat in a very large percentage of cases. Wood has employed suspensions of lactic-acid bacilli successfully.

There are, however, many cases which resist the antiseptic and mechanical applications heretofore employed. Usually when such resistance is encountered, the bacteria

are buried in the deep pockets of the tonsils, and tonsillectomy is required for their complete elimination.

In a paper dealing with this subject, printed in *Paris Medical* for March 4, 1916, Paul Carnot advises irrigating the throat with a mixture of Labarraque's solution, consisting of one tablespoonful of this solution to a liter of water. In other cases he finds the local application of iodized glycerin, camphorated phenol or eucalyptus oil of value. Sometimes inhalations of eucalyptus or gomenol are of value. However, in severe cases he has found it desirable to resort to local applications of an antidiphtheritic serum. He prefers Martin's antibacterial serum for this purpose, this being obtained by injecting the horse supplying the serum not only with the diphtheritic toxin but also with the bodies of dead bacteria in order to produce antibodies as well as antitoxin in the serum to be employed. Martin incorporates this serum with a gum, making pastilles which the patient can carry in his mouth and suck an hour at a time, thereby keeping the pharynx constantly in contact with the serum. In some severe cases, Ravaut has combined with these Martin serum pastilles a certain amount of arsenobenzol and powdered camphor, talc and boric acid being used as vehicle.

Carnot declares that this method of treatment will succeed in the vast majority of cases and usually in less than fifteen days.

SYNTHETIC CAMPHOR EQUAL TO THE NATURAL

Corroborating previous investigators, C. Bachem, of the Pharmacologic Institute of Berlin (*Med. Klin.*, 1915, p. 425), reports, as a result of animal-experiments, that synthetic camphor in every way parallels the action of the natural product, and, thus, may freely be prescribed in lieu of the latter.

EXTEMPORIZED CONTINUOUS BATH

In a discussion by army surgeons, at the Medizinisch-Naturwissenschaftlicher Verein of Tuebingen, relative to make-shifts in wartime, Doctor Sellheim (*Muench. Med. Woch.*, Jan. 5) demonstrated how an ordinary bathtub can easily be made to serve for the continuous bath. A large, strong bed-sheet is disposed in the tub, the patient is placed into it, and then the edges all around are stretched so as to support the body and head in the desired position, and thus fastened to the top of the tub. [Presumably, if the top is

not of wood, cords might be attached to the sheet and extended to staples driven into the floor.—ED.] A small tank is fastened before the hot- and cold-water faucets and a thermometer set into this. In this way, the temperature may be adjusted and the flow regulated; thus keeping the bath continuously at the desired temperature.

COPPER AS A CURATIVE AGENT IN TUBERCULOSIS

Copper, once quite a favorite, had virtually lost its position as an internal medicament, but of late promises to reestablish itself in the *materia medica*, the literature on it in the continental medical press growing apace. Various references to this subject have appeared in these pages for the last few years (notably about copper sulphocarbonate as an intestinal antiseptic), and only very recently we printed an abstract from an article by Strauss on the action of copper salts (as proposed by Finkler) in tuberculous disorders.

Subsequent to the latter, the Countess von Linden, of Bonn, one of the champions, has essayed to refute (*Muench. Med. Woch.*, 1915, p. 111) those who deny any special and selective virtues adhering to copper with respect to tuberculosis; particularly contradicting Moeves and Jauer (*loc. cit.*, 1914, No. 26), who, basing upon experiments with inoculated cavies, declared it rather to shorten the life instead of causing benefit (compared with control-animals).

Since she, Dr. von Linden, has, during the past three years, witnessed such remarkable curative effects from copper salts in 8 separate experimental series conducted with tubercularized cavies, she endeavors to find an explanation for this discrepancy. And this she believes to find in the unequal conditions under which each has operated, when they, certainly, should be absolutely alike. And this is not so in the case of the two critics mentioned.

Certain factors must be borne in mind in this connection; namely: The virulence of the infection. The more acute the course of the tuberculous infection and the sooner it ends in death, the less chance is there for the medicament to exert its influence upon the disease-process. For, the copper does not immediately upon its entrance into the circulation effect disinfection of the blood and tissues, that is, does not forthwith annihilate the noxious bacteria. Rather, a certain period must lapse before the tuberculous niduses can saturate themselves with the

copper and then convey a surplus to the pathogenic bacilli. Thus, the copper-therapy leads only slowly and gradually to the extirpation of the parasites causing the disease and to the subsequent reaction of the diseased tissues—that is to say, of the healing of the niduses.

The tuberculous process, then, will be arrested in proportion to the relative virulence and resistance of the disease-germ.

The control-cavies inoculated by the author died in from eight to sixteen weeks, and only a very few before that time; none of those of Moeyes' and Jauer's, however, lived longer than six weeks—proving extreme virulence of their culture.

Another important fact to be considered is, the degree of the pathologic-anatomic changes effected in the cuproized animals. This, briefly, depends upon the number of bacteria introduced, the rate of their multiplication, their toxicity, the period when treatment begins as well as its intensiveness; and these changes, or lesions, are greater in proportion to the virulence of the bacilli introduced, to the reduced resistance of the host, to the postponement of the treatment, and its lack of intensiveness.

The author injected from 1.2 to 2 mg. of the copper salt, and a total, per course, of from 7 to 10 mg. The critics injected a total of only 1.2 to 2.4 mg., in doses of from 3-10 to 5 10 mg. (or, averaging but 1.3 the proper dosage); in addition to which, the tuberculosis cultures used by them were, as shown, greatly more virulent; so that the animals died before the copper could become effective.

A decidedly interesting statement is that answering the critics who allege fluctuations in the body-weight of the experimental animals. This, Doctor von Linden, replies, only can mean irregular and bad feeding or that the cavies had a stall infection ('e. g., with diplococci). When the cavies inoculated with tubercle-bacilli are healthy and well cared for, they invariably gain in weight during the first weeks, which may attain to a maximum of 250 Grams. More interesting yet, the animals submitted to the cupric therapy gained from 700 to 900 Grams—from 300 to 350 percent (roughly) over the control-animals. A remarkable fact, as surely!

The detailed data of these experiments, as also any further observations, the author promised to publish in the *Beitrage zur Klinik der Tuberkulose*.

The author concludes by citing a number of investigators who have written on this sub-

ject, not at all unanimous as to the beneficial effects of the copper-therapy, some of whom deny all influence whatever. Inasmuch as lecithin has been associated with the copper salt by Finkler, Strauss, and von Linden, a few of the doubters (Mehler and Ascher) are inclined to ascribe any benefits from the treatment witnessed to that exciter of leukocytosis; still, later, they have declared that borcholin [?] when associated with copper cured tuberculous lesions in humans much quicker than does the borcholin alone. Junker, while declaring this treatment not yet ripe for adoption in practice, expects a good outcome from further clinical experimentation. Likewise Eggers considers the asserted affinity of copper for tuberculous tissue supported by 5 cases of external tuberculosis thus cured by himself; at the same time mentioning the successes attained by Strauss in lupus and verrucous ulcerations. Eggers observed marked improvement under the copper-regimen in his 15 patients suffering from pulmonary tuberculosis; only, he warns against too hasty inferences, inasmuch as very often consumptives are greatly improved or even cured under modern sanitary and hygienic methods. Bodmer has reported satisfactory results from the intravenous administration of copper, used in the form of the dimethyl-amidoacetate.

Of this same method of administering copper, already in 1913 (meeting of the Association of German Scientists and Physicians, at Vienna), Sorgo declared that the copper-therapy must be greeted as a notable step forward in the chemotherapy—that is, the medicinal treatment—of tuberculosis, both internal and external, and that the organic synthetic salt seems to be full of promise as the first, possibly, of a new, valuable line of salts of copper.

* GAUCHER'S DISEASE

Our only excuse for referring to this disease, of which thus far only 18 cases have been reported since it was first described by Gaucher in 1882, is, that two new cases have recently been brought to light by Knox, Wahl and Schmeisser in *The Bulletin of the Johns Hopkins Hospital* (Jan., p. 1); and these gentlemen state that probably the disease is much more common than is generally believed to be the case.

The characteristic symptoms of Gaucher's disease seem to be about as follows: In sidious onset, in the majority of cases in young adults, but possibly in infants as

well as in middle life; a feeling of weight, accompanying enlargement of the abdomen, frequently hemorrhage, usually epistaxis or bleeding from the gums. The most constant physical sign was, enlargement of the abdomen, due primarily to increase in the bulk of the spleen and liver. The spleen is described as, in a number of instances, "filling the abdomen," and the liver was enlarged in 14 out of 16 cases reported in detail. The superficial lymph-glands were often moderately enlarged, while the blood presented a picture of secondary anemia, the most striking feature being reduction of the number of leukocytes.

The authors of the article cited, after a careful pathologic study of the two cases reported, have come to the conclusion that Gaucher's disease is not primarily a disease of the spleen or of any other organ or set of organs, but rather a generalized process due to a disturbance in fat metabolism, this manifesting itself by lipoid metamorphosis, that is, by a more or less diffuse accumulation of lipoid material in many cells, with the formation of characteristic large pale cells.

PREVENTION OF MALARIA

From the U. S. Public Health Service we learn that 4 percent of the inhabitants of certain sections of the South are afflicted with malaria, the percentage being higher among the colored people than among the whites. In two counties of the Yazoo Valley, 40 out of every 100 inhabitants presented evidences of the disease. We are told further:

"One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2000 anopheline mosquitoes in malarious districts were dissected, during the early spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the southern states ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinine previous to the middle of May, thus preventing any infection from chronic sufferers reaching mosquitoes and being transmitted by them to other persons."

"Although quinine remains the best means of treating malaria and is also of marked benefit in preventing infection, the eradica-

tion of the disease as a whole rests upon the destruction of the breeding-places of anopheline mosquitoes. The Public Health Service therefore, is urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding-places and the stocking of streams with top-feeding minnows are further recommended. The Service also gives advice regarding screening and other preventive measures as a part of the educational campaigns conducted in sections of infected territory."

ACONITINE IN SCIATICA

Some years ago, writes a contributor to *The Medical World* for September, 1915 (p. 349), he had occasion to try crystalline aconitine in five obstinate cases of sciatica, and in four of these cases the results were very gratifying. In the fifth case, there was a complicating syphilitic periostitis of the upper third of the left femur, and here the aconitine treatment did not prove successful.

The dose of aconitine employed was 1-200 grain, which was injected, by means of a long needle, near the sciatic nerve, just below the gluteal fold. In one case, the results obtained were quite remarkable. The patient was a German, 65 years of age, a teacher in the public schools. He had been confined to bed for seven weeks, unable to move his left leg or turn over in bed unaided. After the second dose of aconitine, given thirty-six hours after the first injection, he could move without assistance, and after the third dose, given thirty-six hours after the second, he could sit up in bed and was free from pain. Five doses, 1-200 grain of aconitine each, effected a cure. On the seventh day of treatment, he walked about his room, with the aid of a cane, and on the fourteenth he was on the street.

THE TREATMENT OF RICKETS

In his very interesting paper upon "The Treatment of Rickets," appearing in *The New York Medical Journal* of April 1, 1916, Henry R. Harrower says that five things are needed to accomplish the desired results:

1. To replace the missing mineral element in the blood and bones, to wit, calcium. Calcium lactophosphate is the form chosen by Doctor Harrower.

2. To replace the missing vitamines, this being accomplished by suitable dietetic

regulation. Among foods which are valuable in these cases, Doctor Harrower mentions fresh milk (he objects to the pasteurized article), spinach, potatoes, carrots, turnips, peas, onions, and in some cases raw wheat or bran. Codliver oil, alone or in various forms or combinations, is also advised.

3. To antagonize the tendency to acidosis, which is invariably present in rachitic children. In nursing children, sodium citrate is recommended to be given in the milk, thus preventing the formation of large curds and favoring digestion. When the urinary acidity is high, sodium bicarbonate may be employed.

4. To enhance the mineral content of the blood, the salts necessary being present in fresh vegetables, which should be freely given.

5. To favor the restoration of conditions which cause or aggravate the disturbed mineral metabolism. This end is best accomplished, according to Harrower, by the use of small doses of adrenal, thyroid, thymus or pituitary. Doctor Harrower says that a mixture of adrenal, thyroid and thymus glands, while employed upon empirical lines, nevertheless gives good results.

TREATMENT OF TYPHOID BACILLI CARRIERS

In his excellent paper upon the treatment of germ carriers, published in the *Paris Medical* (March 1, 1916, p. 231), Carnot declares that he has been unable to cause the disappearance of the bacillus typhosus by the use of intestinal or biliary antiseptics. Calomel, urotropin and other substances have been used for this purpose, but without success. The method of treatment which has been found most successful is what he calls "intensive vaccination," using for this purpose what he calls a bilio-vaccine, consisting of cultures of the typhoid germ in bile, heated to 56° C., injected in doses varying from one drop to 1-2 Cc. The purpose in using this medium for the vaccine was that the bile injected would be eliminated by the biliary route and that the substances contained in the vaccine would also be eliminated in the same way, thereby exerting a local action.

This method of treatment has been employed in a number of cases by Carnot, and the majority have been successful. A number of cases are related in which the bacterin was injected at various intervals, usually a week or more between the injections. In the majority of instances, three vaccinations sufficed to cause the disappearance of the

germ from the stool. However, Carnot admits that while results on the whole have been good, there have been some failures, which it will be necessary to overcome by improvement in the details of treatment.

PHARMACOLOGY OF CYMARIN

Two contributions to our knowledge of cymarin—the active principle of apocynum cannabinum (Canadian hemp: cathartic, diuretic, diaphoretic), have been published in Europe last year (of which the Abstractor has knowledge), brief abstracts of which we find in the *Therapeutische Monatshefte* for July last (p. 402); and from these we quote.

According to A. F. Hecht (*Zeit. f. d. Ges. Exp. Med.*, 1915, p. 264), who has been conducting electrocardiographic experiments, the drug extract, as also does the pure cymarin, affects the mechanism of the heart's action in the same way as does strophanthin. Hence, Hecht characterizes cymarin as a remedy similar to strophanthin, although somewhat weaker in action; at the same time deserving praise for being less toxic and its freedom from pronounced cumulative properties. [Of course, the latter qualification applies to strophanthin as well.—ABSTR.]

Relatively large doses, he finds, cause an atrioventricular succession of heart-beat, prolongation of transitional interval, and simultaneous augmentation of the frequency of the sinus-beat, as well as increased tonus of the vagus.

The other pharmacologic study of this drug was conducted by an Italian—S. Taviani—at the Laboratory for Materia Medica at Florence (*Irch. d. Farm. Sperim.*, 1915, p. 415); these embracing both clinical and animal-experiments, and covering a rather wider field—with these results:

In the case of the frog heart, cymarin retards the rhythm of the organ; in increased dosage, it induces irregularity and peristalsis; still larger doses cause complete arrest, which occurs in systole (contrary to assertions by some writers in regard to other digitalis-like drugs), whether injected or applied upon the heart itself; medium doses increase the heart's strength.

The action upon the rabbit heart virtually is similar; however, it is characteristic here that this influence is exerted with certainty only when the substance is administered intravenously. In addition to the foregoing, there were observed deviations in the intensity of action; but this latter fact Taviani inclines to ascribe to the variable quality of

the commercial cymarins bought, rather than to essential differences in the specific experimental animals themselves.

The experiments did not indicate any influence upon the nerve and muscle irritability; however, arterial blood pressure is markedly increased, by moderate doses no less than by toxic ones. This action Taviani derives from the influence of the cymarin upon the cardiac muscle, but in large measure also from a direct vasoconstrictor action. The respiratory center is stimulated at first, then depressed and paralyzed.

After moderately large doses or the prolonged administration, diuretic action becomes manifest; but, on the other hand, the urine secretion again becomes diminished when very large doses are administered—owing to histologically demonstrable damage done to the kidneys.

Taviani summarizes the result of his observations as follows: (1) Cymarin is possessed of physiologic properties similar to those of digitalis; (2) its clinical utilization is somewhat circumscribed, by reason of its having to be administered intravenously; (3) it is not altogether harmless, owing to its possible deleterious effect upon the kidneys. Finally, cymarin deserves to be submitted to more general biological and clinical studies.

ALCOHOLISM AND THE MORTALITY IN TYPHOID FEVER

Studying the mortality from typhoid fever during a recent epidemic in France, Marcel Labb  (Paris *M d.*, Jan. 22, p. 97) has been struck by the relatively high degree of mortality in cases of typhoid fever occurring in the French army among men who were users of alcoholic beverages. Doctor Labb  reports on the 304 patients cared for in the army hospital under his charge.

Out of these 304 patients, 136 belonged to the active army, 141 to the reserves, and 27 to the territorials. The mortality was as follows: in the men of the active army, 10.3 percent; of the reserves, 15.6 percent; of the territorials, 33.3 percent. The difference in the death rate between the older and the younger men in the various branches is explained in part by the relative proportions of those vaccinated in these branches. For instance, of the men of the active army, usually 57.2 percent were vaccinated; of the reserves, 26.9, and of the territorials, 29.6.

It will be seen, however, that these figures do not explain the great discrepancy in the mortality figures. Excluding the influence

of vaccination, it is shown that the percentage of mortality in typhoid fever is actually slightly less in the reserve than it is in the active army, consisting of young soldiers. Upon examining the cause of death in older patients, Labb  declares that these succumbed on account of organic weakness. Young soldiers, when they died, succumbed to the extreme violence of the infection during the active stage of the disease or as a result of some complication, such as peritonitis or intestinal hemorrhage. On the other hand, the older soldiers are more likely to die after prolonged illness, succumbing, after cure seemed to be in sight, from cardiac collapse, myocarditis, pulmonary congestion or renal or hepatic insufficiency.

This organic weakness may be ascribed to a number of causes; for instance, all forms of infection or intoxication from which the patient has suffered in the course of his existence and which leave behind some weakness that is revealed on the occasion of some later accident or illness. Among these weakening causes, Labb  places alcoholism in the first rank. The greater part of the older typhoid-patients who have succumbed were, on their own confession or according to the information furnished by their relatives, excessive drinkers, and these have presented an assemblage of symptoms characteristic of alcoholism, including intense delirium, in which a desire for the bottle held an important place, extreme agitation, marked trembling, hallucinations. Likewise, there were usually present hepatic enlargement, subicteric coloration of the skin or a state of acholia, revealing long standing changes in the liver. In several of these cases, one might have properly given the cause of death as alcoholism, rather than the typhoid fever itself.

Labb  believes that the inveterate abuse of alcohol is the principal cause of organic weakness occurring in men past 40 years. He does not mean to imply by the figures presented that only the territorials succumbed to alcoholism, since there were uniformly among the reserves and even among the active army individuals whose symptoms were aggravated and deaths brought about by alcoholic excess.

Labb , finally, declares that a study of mortality from typhoid fever among persons of different ages brings once more into light this frightful vice of the French nation, one very important effect of which is, to reduce the resistance of the individual against disease and to aggravate the seriousness of

the prognosis in all severe diseases. This organic weakening alone is sufficient cause to justify severe prohibitive measures against the abuse of alcoholic beverages.

RADICAL TREATMENT OF RHEUMATOID ARTHRITIS

While there are certain predisposing causes of rheumatoid arthritis, such as heredity, injury, exposure, malnutrition, and worry, it is now generally believed that in the majority of instances this ailment may be traced to certain foci of infection elsewhere in the body. It is studied at some length by M. J. Rowlands in *The Lancet* of January 10 (p. 133). These foci of infection, in order of frequency, are outlined by Rowlands as follows:

The most important and commonest cause of the malady, he declares, is, a septic condition of the mouth, a condition not altogether unconnected with the development of modern dentistry. Rowlands believes that crowns and bridgework provide a source of infection, he having seen at least fifty cases of severe arthritis ascribable to this cause. Not only do these mechanical contrivances do injury to the tissues of the mouth, but they serve to conceal infected roots and abscess cavities.

As next in order, Doctor Rowlands mentions inflammations of the tonsils, which are usually of a chronic follicular type. Other causes, in the order given, are enumerated; suppurative processes in the postnasal space; diseases of the female generative organs, especially chronic infections of the fallopian tubes; cystitis arising from gonorrhea, prostatic enlargement or septic catheterization; rectal infections, including hemorrhoids, with ulceration, ischiorectal abscesses, fissures, and fistulas; appendicitis, usually of a chronic type, with occasional exacerbations—bacillus coli usually being found in the urine; antral infections not a common cause, but an occasional one, the infection in these cases usually being mixed—pneumococcic and streptococcic.

Doctor Rowlands describes three types of rheumatoid arthritis, which he classes as the adolescent, middle-age, and the senile types. The first of these is of rapid onset, usually attacking the larger joints; the second, begins at about the age of 40; while the last occurs in patients past 50, this having a predilection for the smaller joints. The second type is the more amenable to treatment.

The cardinal point in the treatment is the disinfection of the original focus, if this is

possible, in association with bacterin-therapy. The latter has proven of very great service in the treatment of these cases; however, the dosage of the bacterin employed is a matter of importance and must be regulated according to the individual features of the case. In old people, one has to be careful to avoid unpleasant reactions from over-dosage.

In the average acute case, Doctor Rowlands begins treatment with 5 millions of the organism, if this is a streptococcus, pneumococcus or a diphtheroid bacillus; but, of the colon bacillus, he begins with 10 millions in an acute case, and 50 millions in a chronic case. If the reaction following the first dose is rather severe, the succeeding dose should not be increased; in which event there should be no great reaction. Following this, the dose may now be increased until one finally reaches the following numbers: Colon bacillus and paratyphoid bacillus, each, 200 million; pneumococcus, streptococcus, pyocyanus, and diphtheroid bacilli, 50 millions.

There should be an interval of from seven to ten days between the injections, and, when there is a very marked improvement, this should be increased to fourteen to twenty-one days. Treatment should be continued for at least a year. If possible, the injections should be given in the evening.

The usually indicated medicinal treatment should be employed in association with the vaccine-therapy.

ERYSIPELAS

Sexton (see *Brit. Med. Jour.*, Feb. 5, 1916) cured a case of erysipelas by painting the surface every 12 hours with ichthyl and glycerin, covered with oilsilk, and by the administration of 1-8 grain of mercury bichloride every four hours. The protoiodide should answer as well; and don't forget your vial of pilocarpine.

INTESTINAL TOXEMIA

"It is remarkable how completely incapacitated an individual may be who has ineffectually emptied the rectum and possibly the sigmoid flexure, whereas, higher up in the large bowel or in the coils of the small intestine some particle of food is undergoing decomposition, and meanwhile is filling, not only the intestine, but also the blood and lymph circulations with poisonous gases." Good for Willson! That's the doctrine we have been preaching all these years.

Miscellaneous Articles

Radiography, and the Twofold Action of Drugs. Tobacco

WHEN radium was discovered in 1899, it was defined in one of the standard dictionaries as a rare metal obtained from pitch-blende, and was said to afford "a cheap, simple, and most effective means of radiography." This was doubtless true then; it is different now in so far as concerns its cost. But the object of this paper is, to show that both radium and the Roentgen-ray confirm the truth of the fact first clearly established by me in a paper published in the April and May numbers of the London *Practitioner*, in 1888, showing that all our active drugs have a double, or twofold, action. They have one effect in their physiological or toxic dose, and a contrary effect in their small, alterative or restorative dose.

The teachers, writers, and authorities generally were chary about admitting this thirty years ago, doubtless fearing it would lend color to the *similia* theory. Fortunately we have since advanced beyond this foolish quibbling over words. Many of the county medical societies of late have admitted Homeopaths to membership, and the American Medical Association some years ago repealed the rule prohibiting consultations with them. We now make our practice agree with what has always been our doctrine, that regular medicine embraces all useful medicines and curative methods. It permits us to administer or prescribe any drug or mechanical measure proved of value, from a nearly infinitesimal dilution of tuberculin or of the vaccines, when they suit, to stimulant hypodermics of strychnine for a failing heart or big doses of quinine for pernicious malarial fever.

In this, we are entirely consistent, since the doctrine of *similia similibus curantur* did not originate with Hahnemann, but had been promulgated long before and never proved anything, though it is one approximate method of selecting the right remedy, which is always opposite in its action to the tendency

of the pathologic action at the moment, therefore, might correctly be called *Antipraxy*, as one apostate from Homeopathy called his special "pathy."

The volume of the "Practical Medicine Series" for 1915 (Chicago), which treats of *materia medica*, preventive medicine and climatology, contains evidences in a large number of quotations from medical writers in various parts of Europe that those mysterious agents have contrary actions according to the dose, like the well-known old remedies.

For example, Esdra reports, in *Policlinico*, that he has treated 53 cases of cancer by the forms of rays under consideration. In 31 cases of epithelioma that were treated with radium, there was benefit in all but 4, and in 5 of the 11 cases that had the x-ray; "but," he says, "the benefit was transient, recurrence at the spot or at a distance followed, and the recurrences proved refractory to the rays. . . . Epithelioma of the lip, mouth, and palate seemed to improve rapidly under radium, but recurrence soon followed. . . . it seemed as if the radium had actually whipped it up into a fulminating course, speedily fatal." However, Esdra added, that "in 5 cases of sarcoma, a permanent cure seems to have resulted under the radium and in 1 of the 7 cases of Roentgen treatment." Again: "Epitheliomas not actively malignant yielded to radium or Roentgen-rays in a gratifying manner." In numerous local affections, the same writer reported cures. These included 12 trachoma-cases, 6 tuberculous ulcerations, and 7 cases of keloid acne. Sometimes one kind of rays succeeded after the other kind had failed.

In cancers of the breast, Kotzenburg reported, in a German journal, 53 cases, with recurrences in 54 percent of them. Futh is quoted as having reported, in another German journal, 56 cases of uterine cancer treated with radium and the Roentgen-rays, and in

53 percent of 45 women who had the radium-treatment no general disturbance resulted soon after, but all the others had more or less trouble, such as depression, loss of weight, and so on. There was much complaint of sequelæ in the bladder and rectum, and in one stricture of the rectum followed.

The reports seem to be about equally favorable and unfavorable as to the results. Rovsing, another foreign observer, was so pleased by the results in his earlier cases that he was induced to give radium especially a very extensive trial, but his tragic experiences afterward forced him to the conclusion that indolent and benign growths were rapidly fanned by the treatment into malignancy and that it is never curative finally. He has been unable to find in the literature any authentic cure of cancer under radium.

The final outcome is what counts, and a long enough time has not elapsed, since most of the recent cures were reported, to ensure that they will prove to be permanent. The large number of favorable cases reported in the volume just cited should be sufficient to raise hopes that eventually the methods may be so mastered that the proper restorative dose and the frequency of repetition may be such as to be both safe and helpful in the majority of cases.

In a great number of benign affections and nonmalignant tumors, both the kinds of rays will doubtless prove at least palliative. In the malignant tumors, there may often be marked improvement for a time; but, with a few exceptions, the final effect will be death when either agent is long pushed. The fatality among the specialists in the use of them was woefully large, until the methods of protecting themselves from the rays were perfected.

While with these hitherto obscure and little understood remedies the exact dosage which tends to the cure and the opposite one which harms the patient more than the disease has not been as clearly worked out as with some of the more familiar drugs, the antagonism between the large and the small dose is manifest, a much more positive and decided antagonism has been demonstrated by observers in the same volume of the "Practical Medicine Series" with regard to nicotine, as well as between the opposite actions of the infusion of tobacco in their different ranges of dose. E. Tedeschi is quoted as having reported, in the *Reforma Medica*, experiments which proved that nicotine causes "a marked and prolonged intestinal spasm" in large doses, while the well-known effect of a few

cigars daily is, to favor the regularity of bowel movements. With the infusion of tobacco, "the intestinal spasm is more intense and prolonged from large doses; while with small doses there is stimulation to uniform rhythmic contractions." This may confirm some smokers in their habits, provided they have already reached their growth; but the great harm which tobacco does to boys has been shown conclusively in college records, and few men escape the cumulative harmful effects from a prolonged use of it.

BOARDMAN REED.

Alhambra, Cal.

HARROWER IN LOS ANGELES

We learn that our friend Dr. H. R. Harrower has recently won a \$25.00 prize for a paper which appeared in the April 1 issue of *The New York Medical Journal*. Doctor Harrower has established himself as a practitioner in Los Angeles, California, his address being 1107 South 7th Street, Glendale. The Doctor will be remembered for his book on "Practical Hormone Therapy," also for the test instruments, the acidimeter, indicanmeter and albuminometer, which he has designed and with which every reader of this journal is probably familiar.

A WHOOPING-COUGH SUGGESTION

Dr. F. A. Remley, of Alvin, Texas, writes us that infusion of fresh chestnut-leaves—made by putting one ounce of the leaves in a pint of water, then boiling and straining, and giving this entire quantity of the tea in one day—will control the vomiting and whooping of pertussis within four or five days. The daily quantity is to be made fresh every morning. Fresh leaves must be used; old ones will not answer. The Doctor is not satisfied with the tincture or fluid extract.

EMETINE IN TYPHOID FEVER

I was pleased to notice in CLINICAL MEDICINE, May, 1915, issue, a digest of my article published in *The Medical Record* for March 20, 1915, relative to the use of emetine in typhoid fever. I also have been reading with interest the reports sent in by other physicians, and was more than interested in those printed in your December issue, especially the article by Doctor McCoy. I believe every statement made by Doctor McCoy. I believe it, because of my experience since I wrote the article for the *Record*.

There has been an epidemic of typhoid fever in my residence town during the past four months, and this has furnished me abundant material for demonstration. I had been treating my patients with emetine, with the same beautiful uniform results, when simultaneously I had two who continued to have elevated temperatures, and whose cases were as near the typical old-fashioned ones as I ever saw. I searched my brain to find the cause, but was about to despair of finding it, when one night I was called to see a 3-year-old child. The child, I found, had a loaded stomach and bowels, and, so, desired to produce vomiting. I gave 1-4 grain of emetine hydrochloride by mouth, but no vomiting had occurred after thirty minutes. So, I gave another 1-4 grain. Thirty minutes again passed, and no vomiting. I then gave 1-2 grain, but still no action.

It now dawned on my slow brain that the reason why my two typhoid-patients were not improving was, because my late supply of emetine was inert. To make certain, I swallowed 1-2 grain of it after a light meal, and it did not nauseate me. Had it not been inert, it surely would have done the work, for I have never been able to take ipecac in the smallest dose without vomiting, ever since I climbed on a chair and got the bottle of syrup of ipecac from my father's table thirty-five years ago and drank the stuff. I also put this emetine to a bacteriological test. A culture containing emetine in the proportion of 1 : 25,000 will not support the growth of a typhoid-culture. But this particular emetine would support the growth of typhoid-bacilli in a strength of 1 : 1000.

I changed products, and thereafter got the same uniform results in the two cases in question that I had been getting, but in one it was the eighth and in the other the ninth day before the temperature became normal. I lost nearly a week because of a poor article.

It is reported officially that straphantin varies 3000 percent, as put out by different firms. I believe that the quality of emetine has an extremely wide variation, also.

Later, I had another case which did not yield readily. Upon making a diligent search for the cause, it was found that the emetine was being very slowly taken up by the patient's circulation. The patient had a great quantity of adipose tissue, and the bullæ made by the injection had not entirely disappeared at the time of the next injection. Upon injecting beneath the adipose layer, the emetine was taken up rapidly and the temperature yielded beautifully. I think that

previous to the deep injection the emetine was eliminated about as rapidly as it was absorbed. I suspect that there is a possibility that Doctor McCoy's failure might be traced to some obstructing factor, also.

The cases of typhoid fever I had during the epidemic, other than the three mentioned, were aborted in from two to five days. In addition to the cases I have had, there have been reported to me by 53 different physicians altogether 163 typhoid cases. Of these, all were reported to have been aborted, except 18. In 16 of these 18, emetine was not used until after the second week, and then with doses of 1-1 grain twice a day.

There may be some cases of typhoid fever which can not be aborted by the use of emetine, but I have never seen any which failed, without being able to find some reason for it, such as poor absorption or a poor emetine, but, as a matter of course, other factors may enter in some instances.

My experience has been that the earlier the emetine is given, the more rapid the results. Early in an attack, the bacilli are principally in the circulation, where the emetine easily reaches them. Later, the bacilli are located in part in the tissues of the lymph-glands of the intestines, and then are more difficult to reach. My theory is that the emetine forms a medium in which typhoid-bacilli cannot grow.

Always stress is laid on the need of a proper diagnosis. I make an early Russo test. This test is not positive after the first few days. If the case is too far advanced for Russo's test, and not far enough advanced for the Widal test, then I use Ehrlich's diazo test. Later, I always make the Widal test. But I consider Russo's test and Ehrlich's diazo test as reliable as the Widal, and they can be gotten earlier—which is of great value. Still, it is necessary always to bear in mind that Russo's test is also positive in measles, smallpox, and advanced tuberculosis, which conditions are easily recognized. Also, Ehrlich's diazo reaction is positive if the patient has been taking phenolphthalein.

Every case of typhoid fever is a case unto itself, just as every case of diphtheria is a case unto itself. I give emetine in every case of typhoid fever I treat. Ordinarily I give to adults 1-2 grain twice a day; but it is also very necessary that the bowels be kept well open, the feeding carefully regulated, and proper hygienic conditions observed.

I believe in emetine in typhoid fever just as I do in antitoxin in diphtheria; and I should not think of leaving it out of typhoid-

treatment, any more than I should consider abandoning the antitoxin in a case of diphtheria; for I get the results with it. I am convinced that when once the profession learn how to use it it will be known to be a specific for typhoid fever.

If anyone cares to ask any questions I shall be pleased to answer them, provided I have made observations or tests that give me knowledge to answer them.

W. L. FRAZIER

Mountain Home, Idaho.

PUT THIS BEFORE YOUR CLIENTELE

A regular physician, sometimes called a "medical doctor," is not simply a doctor who uses medicine alone to cure disease. This term of regular physician is applied to one who follows a system of practice that has been proven by centuries of usage and superiority of service over any of the other socalled systems of treating the sick.

There are other systems of great value, namely, the Homeopathic and the Eclectic, but, the regular physician is that one who is unhampered by any narrow creed and is free to adopt in his treatments the best that has developed for the cure of sickness, whether by science or outside of science.

Regular doctors do not limit their treatment of the sick to the single method of dosing out drugs, as many drugless doctors would have you believe. Many people think it is wrong for doctors to give drugs because some drugless healer has told them that they are poisonous and harmful. Wonderful advice, when you stop to consider the fact that the drugless healer knows nothing about drugs or their effects, while the law does not allow him to use them even if he believed in them.

Why are drugs such a terrible thing as the drugless healers would have you believe? All drugs belong to the animal, vegetable or mineral kingdom. God had a hand in the formation of these things and permits them to grow. He endowed man with a mind to find out about things put here for his welfare. Dogs frequently are seen to eat grass when sick. Cattle eat certain herbs for ailing conditions. Cats like catnip, because it keeps off cat-diseases. Nature endowed these dumb animals with this faculty to use these things put here for their benefit—why should not man make use of them? He has. And the regular medical physician has been doing good for humanity for centuries, and today, notwithstanding the numerous socalled drug-

less healers, they outnumber all other systems of practice.

Now, the use of drugs is only one small part of our system of curing disease. We use water in many ways, regulated diet, graduated exercise, sunlight, fresh air, heat in many forms, massage, electricity, radium, vaccines, serums, and so on. All of these, and more, we regular physicians make use of to cure sickness and prevent disease.

What would you think of a farmer who wanted to raise a crop, yet, who would do only one thing, namely, plow the ground? Not much of a crop would he raise if he did not also harrow, disc, seed, irrigate, and so on. Yet, many people will believe those drugless healers, who claim every disease is due to one thing, and one method of treatment is curative in all sickness. Many claim that all disease is due to a defective spine and claim to cure all disease by manipulating the spine. It is about as likely as the farmer raising a crop by doing nothing but plowing. Why do not all people, in selecting their doctor, use common sense, as they would in raising a crop?

We regular physicians do not claim that the drugless healers do not cure anything. But, you will notice that when they do cure a patient it is advertised extensively; and it seems that the public is unduly impressed by the fact. Possibly it is because the public thinks it wonderful for the drugless healers to cure anyone even occasionally; yet, they expect the many cures we, the regular physicians, make and, hence, are not so enthused over them.

In the past two months, I have had 23 former patients of drugless healers, who had received no permanent benefit; each one of whom after a short course of scientific treatment was cured. One woman had been having her spine manipulated every other day for a year, at great expense, but no results. A short course of treatment under my care cured her entirely. My fee was \$8.00, former work by a drugless healer amounted to \$187.00, after he knocked off some of his full bill.

I find many patients who have simple troubles, but had been told by drugless healers that they had dislocated hips or backs or other serious troubles. The public should know that the hip is the strongest joint in the body and very seldom dislocated, except by the most severe accident. Yet, many people believe what drugless healers tell them when much of it is told to encourage the patient to take a number of treatments at so much by the dozen.

In Montana, no drugless healer dares to give chloroform or prescribe drugs in any form, either externally or internally, for that would subject them to a fine; and if one of your family loses his life under such procedure, the healer is liable for heavy damages for malpractice and a probable jail-sentence.

These are facts I wish you to consider and weigh well, for it is for your benefit. We, the regular physicians, are unhampered by law, by lack of training, prejudice, or narrow ideas; hence, we use the best of every method under the sun for the alleviation of sickness. We do all the drugless healers can do, and a hundred times more. Because you failed to get results with one regular physician, do not conclude that all are on the same footing, for, the very next man may be more thorough and cure you quickly.

F. E. McCANN.

Big Timber, Mont.

FORMALIN FOR SORE THROATS

I am surprised that none of your correspondents even mention formalin for sore throats. I know of no gargle or spray better. A 1-2-percent solution with or without potassium chloride—and perhaps with a few drops of liquor coccii (cochineal) to make it look pretty—takes a lot of beating.

J. M. G. EWING.

St. Vincent, B. W. I.

SUGGESTION FOR AN OBSTETRIC FORCEPS

I am not informed as to what type of midwifery-forceps is in general use in the United States. But in the United Kingdom

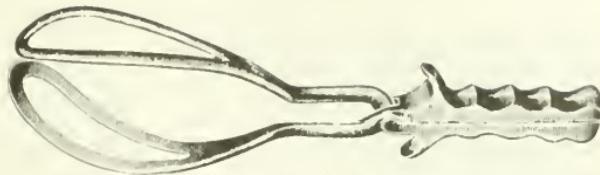


Fig. 2. Simpson forceps.

Simpson's long forceps (Fig. 2). I presume however, that in America probably some type of an axis traction forceps is the kind most commonly employed by general practitioners. So far as I know, axis-traction forceps similar to the one illustrated in Figure 1 are "the last word" in midwifery-forceps.

The main objection to the Simpson forceps is, I believe, that it is an unsuitable instrument for pulling in the axis of the pelvis; for, because of this, any force applied is partially lost, and there is a great tendency to produce bruising of the soft parts and tears of the perineum. The axis-traction forceps was designed to pull in the axis of the pelvis—the curve of Carus, if my memory serves me right.

It seems strange to me that no one, bearing in mind the curve of Carus, has yet tried a curved pair of forceps. Still, this would strike one as being the proper type of instrument to employ.

If one takes two surgical needles, one half curved and one a half-circle, and puts these through a piece of thick cloth, then the half curved needle will represent Simpson's long forceps, while the half-circle needle will represent a pair of curved forceps. Pull the half-curved needle out, and you will find that the pressure on the part of the cloth, which corresponds to the perineum, is very severe, while the half-circle needle pulls out exceedingly easily, without undue pressure at any point.

Figure 3 depicts an obstetric forceps similar to Simpson's long forceps, only with shanks and handles curved in one continuous curve. I have drawn the handles shorter than Simpson's and added a fixation-screw at the end. Such a forceps would, I believe, act similarly to the half-circle needle.

For application, the patient would lie in the left lateral position and the blades would be applied in the ordinary way.

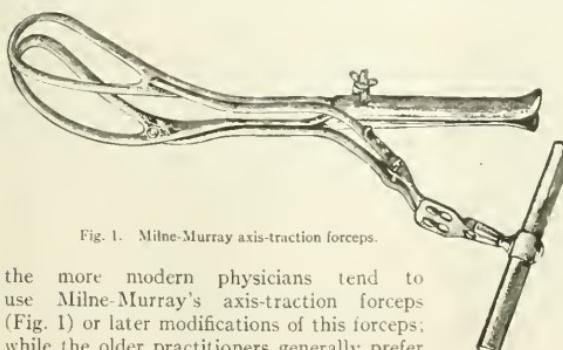


Fig. 1. Milne-Murray axis-traction forceps.

the more modern physicians tend to use Milne-Murray's axis-traction forceps (Fig. 1) or later modifications of this forceps; while the older practitioners generally prefer

The physician would then change to the other side of the bed and grasp the handles and pull; when the direction of the pull would bring the handles toward the patient's abdomen. Hence, the short handles. Indeed, it is quite possible that the patient herself might be induced to pull on the instrument, instead of

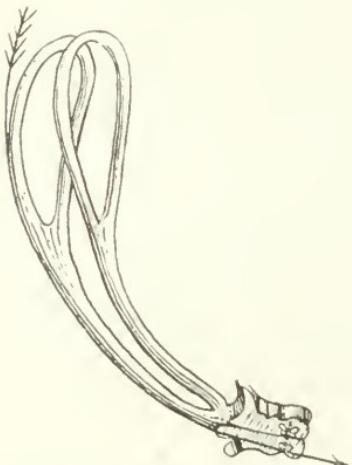


Fig. 1. Forceps suggested by Doctor Ewing.

pulling on a towel, during the pains. The fixation-screw would prevent slipping.

It seems to me that there would be danger neither to the perineum nor the urethra. Of course, the forceps would have to be reapplied as rotation took place, but this needs to be done with any kind.

If I were not up country, in a tropical island, thousands of miles away from instrument-makers, I should have this instrument made and try it. I believe it would be very nearly ideal.

What is your opinion? Do you think it is worth trying? Take a look at a section of the pelvis.

If the instrument is made with the proper curve and properly applied, it cannot injure any soft part.

T. M. G. EWING.

St. Vincent, British West Indies.

[We referred Doctor Ewing's article to Professor William Rittenhouse, of Bennett Medical College, who made the following comment:

"I have read Doctor Ewing's article carefully and with much interest. The idea evolved is one of great importance, and one which I have unceasingly impressed upon

my students, namely, that at every point in the curve of Carus the direction of traction must correspond to the curvature at that point. Now, the most decidedly curved portion of the curve of Carus is its lower end, so that on a side view it is almost hook-shaped. Hence the necessity of that sweeping movement of the forceps handles at the moment of exit which brings them over the patient's abdomen.

"The hardest part of the problem, however, is in the upper half of the curve of Carus; in other words, when forceps are applied at the superior strait, how best to secure the traction needed to bring the head half way down. In the lower part of the pelvis almost any forceps will answer if it be wisely used.

"The doctor's illustration of the two needles is apropos. It is true that if the half-curved needle be withdrawn in a straight line the pressure on the part of the cloth corresponding to the perineum will be severe, but most of that pressure vanishes if the eye end of the needle be raised, and the withdrawal be made with a sweeping motion similar to that which we make with the forceps handles at the moment of exit.

"In my opinion most forceps are made too straight, and I should like to try such a curved instrument as Doctor Ewing suggests. The only doubt in my mind is whether it would be effective in the first part of a high operation. When the head is at the superior strait the direction of traction must be downward and backward toward the coccyx, and I do not feel sure that this could be made effectively with the proposed instrument except by leverage, using the pubic arch as a fulcrum, which, of course, could not be done without injury.

"I have a Tarnier axis-traction forceps similar to the Milne-Murray, but I seldom use it because it is not at hand when wanted. I do not want to carry two pairs of forceps all the time, and I do not like the Tarnier for ordinary work, it being too straight. So on the rare occasions when I have to apply forceps at the superior strait I improvise axis-traction in the following way: I apply the Hodge forceps, which I always carry, in the usual way. An assistant pulls moderately on the handles in the direction of the patient's feet, while I make traction on the fillet downward and backward as nearly as possible on line with the axis of the superior strait. It might be thought that the perineum would be in the way, and liable to suffer injury; but by crowding it upward as well as backward it gives little trouble. As soon as the

head is half-way down, the fillet is removed and the delivery completed with the forceps alone." —ED.]

TO THE MAN IN "HARD LUCK"

The correspondence from "Q" of "Texas" in a recent CLINIC will appeal to many of your readers as a real experience, not by him alone, but as that of many other doctors. He says that in three years' practice in three states he has failed to collect more than ten cents on the dollar. Now, I'd like to comment a little on his condition. There must be reasons for his experience. The fault may be his.

1. He may "mix" either too much or too little.
2. He may be the right man, but be located in a poor place.
3. He may be the wrong man in a good place.
4. He may have been surrounded by unethical and unscrupulous physicians.
5. He may have been where fees are too low.
6. He may have practiced where both the people and the soil were poor.

Many things enter into a physician's success or failure. Sometimes it is his own fault, but just as often it is the fault of the kind of people he has to deal with or it may be the kind of physicians he has to compete with. Physicians who contrive all kinds of schemes to get business and then render service for about one-half of what their services are worth make life miserable for the honest physician with a family to support, and also does himself an injustice.

I have always been able to collect about 90 percent of my accounts. Too many physicians wait too long after service is completed to collect the amount due them.

Better send your statement in about ten days or two weeks, to keep the transaction fresh on their minds. If you plead poverty and urgent need, often you can gain their sympathy, and with it their money and future business. It is best to appear broke, even if you have \$5000 in the bank or in your pocket.

If you pass them up as deadbeats and fail to collect your account, you lose in four ways:

1. The money they owe you;
2. Their future business;
3. Their influence;
4. The confidence of those whom you owe, because you have failed to pay them with the money you should have collected, but didn't.

The brother from Texas who is now teaching school sure has my sympathy, as I have done that same thing and have been thinking of doing so again, after a number of years of general practice.

I have all my pedagogical data collected and ready to hand in for a license under the new certifying system.

Business either will have to pick up or I'll have to get into some other business.

The brother from Texas may not have stayed long enough in one place. I note that he states he has tried three states in three years. There are others, however, who have moved often and more in that time and lived in one state.

There have been turned out entirely too many M. D.'s in the past twenty years. In addition to this, all kinds of cults and quacks have sprung up, thus making it harder for the honest qualified physician to get a start, as many people—intelligent ones, too apparently enjoy being faked. The words of P. T. Barnum about the American people loving to be humbugged is as true today as it ever was. The best place for a physician to locate is in a German or French Catholic farming community. I am neither one of these, but have done business with them.

"KIRK."

SORE THROAT AND CROUP. EMETINE IN HEMORRHAGE

Certainly we shall all get help from these contributions on sore throat and other winter diseases; so, to help along, I send my mite. For tonsillitis, simple or follicular, if abscess has not as yet formed, give the tonsillitis tablet (containing aconitine, bryonin, atropine, and mercuric iodide) until you see its effect on temperature; saturate the patient with calcium sulphide; give him any good antiseptic gargle. Quick effect will be secured. If an abscess forms, despite this treatment (which it will not if you get the case soon enough), incise freely, then follow with hot peroxide washes.

For croup (of which we have little out here), give syrup of ipecac, to produce vomiting, if the breath is about stopped. If the cough is crummy, calx iodata, gr. I, in hot water every hour or two, will change this and prevent true croup. In my families, I give this as a prophylactic when a child is hoarse at bedtime. Most mothers are very willing to keep these calx-iodata tablets on hand.

I must also report some emetine experi-

ences. A child of 6 years had severe epistaxis, which could not be controlled by local measures. Everything imaginable was tried. At the same time the child was passing tarry, bad-smelling stools—clearly denoting intestinal bleeding, high up. (No blood from the nose was swallowed, I feel sure.) One-half grain emetine hydrochloride was given hypodermically, and this stopped the bleeding for twenty-four hours. Upon its recurrence, a second dose was given, which caused complete recovery, lasting several months. When the nosebleed did occur again, it was easily stopped by local measures, but upon exertion would start again, as also the tarry stools in very small amounts. This time a dose of emetine produced complete recovery. There has been no relapse within a month.

Another case is that of a boy of 13 years, in whom hemophilia was diagnosed, there being hemorrhage from nose and gums. Everything was tried, even packing the anterior and posterior nasal passages, but with out benefit. At last emetine was given hypodermically every twenty-four hours for about ten days. There was some improvement, but the hemorrhage recurred. Then, after the emetine failed, coagulose was given, but still there was no benefit. Although a microscopical examination of the patient's and the father's blood showed some antagonism, a subcutaneous injection of the father's blood (10 Cc. in amount) stopped the bleeding. Bleeding did not recur in thirty days.

MONTANA.

ASSOCIATION OF THE U. S. INDIAN MEDICAL SERVICE

A number of physicians of the Indian Medical Service are perfecting an organization, with the sole object of placing this department of the government upon a higher plane. Several years ago, the United States Public Health Service recommended many changes that would increase the *esprit de corps* and insure a supply of permanent physicians for the Indian Service; however, very little has been done.

The Indian Medical Service requires more from its physicians, while paying less, than does any of the other government services. It is because of this inadequate compensation, together with the absence of reasonable expectation of promotion and of coordinate organization, that these physicians are planning an active campaign for reorganization.

The Association will ask for a chief medical

officer whose authority in matters pertaining to his office is to be supreme; organization to be based upon that of the higher government services; and increase in rank and of salaries. Former and present active officers of the Service are requested to write to the "Temporary Secretary, Association of the Indian Medical Service," Shiprock, New Mexico, or, to the Treasurer of the Association at Crozier, New Mexico.

TREATMENT OF RHEUMATIC JOINTS AND MUSCLE PAINS

Replying to your inquiry (April CLINICAL MEDICINE, page 301) for suggestions regarding the successful treatment of rheumatic joints and obscure muscle pains would offer the following:

For joints: Immobilization by open case or splints well padded; methyl-salicylate ointment thickly applied on wool covered with oiled muslin; saturation with sodium salicylate as quickly as possible, large doses given frequently with hot water until stomach shows signs of rebellion, then change to mixture of cimicifuga and gelsemium, generous doses (veratrum may be added with profit occasionally); galvanism, using positive pole 25 to 30 ma. with electrode wet with sodium salicylate 5-percent solution, followed by high frequency, using vacuum electrode; fly-blister an inch wide and 4 to 6 inches long and an inch apart; lately have used quinine and urea hydrochloride, full ampule injected into joint after aspirating what fluid will come out readily. This treatment will give positive relief for two or three days. Heat should be applied continuously; I use an electric pad and like it best.

For muscles: Practically the same treatment except that no immobilization is employed except for lumbago, when I use adhesive plaster, tightly applied over the whole back, from coccyx to scapulae, well over iliac prominences (crosswise) and up to scapulae; either oil of gaultheria or methyl salicylate ointment well rubbed in for 15 to 20 minutes twice or thrice daily; follow with hot iron (electric) and "bake" it in.

Vibratory massage has a definite field of action here. I apply it in my office after thorough rubbing and massage with oil of wintergreen. Positive galvanism is employed, as described, followed by high-frequency sparking to toleration and internal treatment as outlined.

Joint cases (not gonorrhreal) are usually anemic and need iron, manganese and arsenic

in some form and do not improve rapidly without it. Diet largely of milk, much water internally, hot baths to keep skin active and daily internal clean out.

ALEXANDER BARCLAY.

Cloquet, Minn.

[To Doctor Barclay's exceedingly thorough treatment I would like to add two expedients, often of value. First, bacterins. If a source of infection can be found, as an enlarged and inflamed prostate, a middle-ear discharge, pyorrhea, or chronic tonsillitis, try to cure the original trouble, and if possible get cultures for an autogenous bacterin. In four cases out of five streptococci cause the trouble and a stock bacterin will give relief. Emetine for pyorrhea.

Second, make a careful examination of the urine. This will throw light on many obscure "rheumatic" pains. Nearly always there is excessive acidity, requiring alkaline treatment. Indianuria shows the necessity for intestinal antisepsics. Do not forget to make a bacteriologic examination of the urine. It may give you the key to the trouble.—ED.]

TAPEWORM IN THE HORSE

When you responded to the "S. O. S." call of the poor old horse, to rid him of the unwelcome tapeworm, as narrated on page 173 of the February number of CLINICAL MEDICINE, did you really mean it was necessary to consider its size and condition when the dose was determined? I have for these many years believed, and acted upon the conviction, that it took just as much to kill a four- or five-inch stomach worm in a child as a grown person, and the same rule ought to prevail in a horse, regardless of weight.

Fifteen or sixteen grains of the first decennial trituration of santonin, given in four doses a few hours apart, with water, invariably finished them. Little children too small for such a dose are seldom infested with these guests, hence are not considered in the above statement.

HENRY M. WARREN.

Jonesville, Mich.

[We referred Doctor Warren's letter to our veterinary friend and colleague Dr. N. S. Mayo, who recommended the areca-nut treatment in the February number. Doctor Mayo comments as follows:

"Pulverized areca nut is an active purgative, and when administered to animals as a

vermicide, gives best results when it is given in doses that induce purging. In veterinary practice, when a medicine of this character is administered, the welfare of the patient is always given first consideration; for this reason varying dosage was indicated.

"Regarding santonin as a vermicide in human practice, I do not feel competent to express an opinion. In veterinary medicine santonin is used extensively for the destruction of roundworms; for tapeworms, areca nut or malefern extract is generally preferred." —ED.]

EMETINE IN WHOOPING-COUGH

A recent article in the public press says that some doctor in Wisconsin, or somewhere in that country, has made the discovery that emetine is very valuable in whooping-cough. I want to say that I have used this drug in this disease with marked success for a number of years, but did not go into print as a discoverer, taking it for granted that others ought to know of this as well as I.

Calcium sulphide, with enough lobeline to control the spasmodic feature, along with the emetine, has never failed in my hands.

GEORGE A. MATHEWS.

Wray, Colo.

[The item to which the doctor refers was printed in one of our Chicago papers. The doctors whose experience was reported live in Milwaukee. We wrote to one of these gentlemen, Doctor Strauss, and he corroborated the press statement, declaring that the emetine was used hypodermatically in large doses—1-2 grain, as I recall it. As this quantity seemed very large for children, we have hesitated to advise the use of the drug in this manner and dosage. However, in dosage fitted to the child's age we have great faith in it, especially if employed in association with the remedies recommended by Doctor Matthews.—ED.]

HELP IN TREATING PELLAGRA

Dr. J. B. Robertson, of Gunsight, Texas, writes us that he will be glad to send any physician interested in the matter full details regarding the method he is using in treating pellagra, upon receipt of stamps for postage.

MIGHTY NICE OF YOU, DOCTOR

Enclosed you will find my check for two "bucks." You may keep the journal coming

to my address until I am dead, or you are otherwise ordered to stop it. When I am so deeply indebted to you that you feel that you cannot allow me to run any longer, then urge me as you have this time and I shall remit again. I am taking entirely too many journals and I shall cut out some of them; but I do not feel like cutting out THE AMERICAN JOURNAL OF CLINICAL MEDICINE.

C. V. STEPHENSON.

Centraville, Tenn.

THE AMERICAN JOURNAL OF ELECTRO-THERAPEUTICS AND RADIOLGY

Dr. William Benham Snow, who for many years has been editor and publisher of *The Journal of Advanced Therapeutics*, writes us that the name of this publication has been changed to *The American Journal of Electro-therapeutics and Radiology*. It is said to be the only journal published in this country which is devoted to physical therapeutics. Much attention will be devoted to x-ray and other electrotherapeutic measures, physical therapy as a whole not being neglected. Any physician who is interested in this form of therapy should certainly subscribe. It is published by the Scientific Authors Publishing Company, 2020 Broadway, New York City.

CURRENT COMMENT BY A COUNTRY DOCTOR

The High Price of quinine.—With the price of quinine accompanying that of many other drugs to a most burdensome point, and with the prospect of its reaching very nearly to the prohibitive figure, economy of administration of the drug, as well as the employment of a serviceable substitute, is forced on the attention of the physician. Probably many who have adhered to the massive dose of quinine, usually in the form of the sulphate, will give attention to the lessening of dosage and the more careful selection of the combination with the quinine molecule. Ammunition being short, it will be used with the highest obtainable degree of efficiency.

If the "clean-up" idea is followed up, cholagog and intestinal-antiseptic treatment being carried out from the start, together with almost prohibitive initial dietetic regulation, the forces of nature can be so conserved and concentrated that with a little aid the invading forces of the protozoa can be overcome.

Briefly, the treatment of the various forms

of malaria resolves itself into giving the system as much rest as possible from its normal physiological functions, including maintenance of balance between benign and prejudicial alvine flora, and in aiding destruction of the causative organism in the blood current; always looking to the symptomatic manifestations while doing so.

If the patient be seen during the chill or other algid state, we shorten this period by the use of glonoin, amyl nitrite, or some other effective remedy, then look to elimination by kidney, skin and rectum, thereby aiding in throwing off formed and forming toxic products.

With all the secretions established and hematuria controlled (if present), look to the antiperiodic. If quinine is to be used, just forget, for the moment, its antimalarial power while considering the general indications. If there is nervous irritability, for instance, the valerate or the ferrocyanide will likely be thought of, or possibly the bromine combination may be called for. If the hydrochloric-acid aid to stomach solvency is desired, a muriate will be used; but, in any event, the quinine is given frequently and in divided doses, thus securing a full and rapid effect. When the hypodermic use of quinine is resorted to a very soluble salt will be selected, but this we shall not discuss.

The general acceptance of derivatives of cinchona bark in treating malaria, has caused neglect of other agents known to have antiperiodic action; it is, however, to be hoped that indigenous vegetable drugs will receive a more thorough investigation, therapeutically and chemically, during the scarcity of quinine. Salicin, as well as other North American drugs, are admitted to have antimalarial value; but the remedy of possibly greatest promise, certainly of great neglect, is eupatorium perfoliatum, or thoroughwort. This drug has had a place in the U. S. P., has been extensively used by Eclectic practitioners, and has been used in domestic practice since the days of Thomson; previously by the Indians, whose empiric procedure was not always without virtue, for how long we do not know. Certain it is that eupatorium perfoliatum will often relieve the irregular types of malaria when quinine and arsenic have failed. It is said to have been extensively used during the Civil War when quinine was almost impossible to secure in the South. More investigation of its therapeutics and chemistry might give us a real North American substitute for quinine. If bitterness is essential for a "malaria cure," anyone whose

grandmother has given him a few draughts of hot infusion of thoroughwort can testify as to the taste. And, yet, that horrible infusion is laxative, cholagog, diaphoretic, and antiperiodic. Perhaps we forget some of the really good things of empiric domestic medicine.

Tapeworms.—That kindly and incompetent Bourbon, Louis XVI, was not the man to bolster up successfully a political system, moribund from the evil deeds of his predecessors and their satellites, but, after all, the world owes him a debt—at least that portion who, through luxurious living, necessity or carelessness, eat the underdone flesh of beast or fish. It was the unfortunate husband of the equally ill starred Marie Antoinette who pensioned the widow of the Swiss physician, Noueffer, for making public her husband's method of ridding man of his unwelcome cestodian guests.

The writer speaks on the subject of tapeworms as one having authority, since he has three times been the host of these incarnations of laziness; so lazy are they that they take their food predigested and even reproduce their species without going to the trouble of looking up a female.

How the last two guests gained entrance into my intestine I cannot say, but the first can hardly be attributed to *bon vivant* habits. He (or rather it) was of the *tænia saginata* variety, and evidently was "adopted" when eating, nearly raw, the flesh of deer, goat or beef, prepared by the simple process of tearing up the animal's musculature and drying it on a mesquite tree upon the plains of Sonora, Mexico.

There was no male-fern available for cure, and the presiding genius of the *botica* said: "Señor, why not the pomegranate?"

An infusion of this remedy was made and taken with seeming success, but the head was not passed, and in about three months there was a return of the parasite. This time aspidium was available and the oleoresin was taken with complete success.

The second and third times *tænia solium* was the species and male-fern was also used, emulsified, with the addition of castor and croton oils for No. 2; but, oh what a mess! With more than a casual familiarity of things pharmaceutical, and with respect to the memory of Louis XVI and dear old Doctor Noueffer (who outdid many modern physicians in that he left his wife something she could turn into cash) the statement is here made that nothing tastes as badly and is as hard to disguise as aspidium; but the

stuff can be given in capsules with castor oil, which obviates the necessity of tasting it. Therefore, the disposal of No. 3 was more pleasantly accomplished.

The statement that there is danger of toxic effect from male-fern, when it is combined with castor-oil, seems to be unfounded. Of course, if added catharsis is needed after two hours it should be promptly resorted to, but it is pretty safe to say that the remedy, when given with castor oil and a little croton oil, will do the work with uniform certainty and without danger. Let the patient fast over night, give a saline laxative on arising, then after the saline has acted, administer the male-fern combination. When the worm passes, the patient should sit on a vessel of warm water so that it comes up to the rectum. Always look for the head and for possible detached portions that may indicate another worm.

Incidentally more people have tapeworm than is generally supposed. Also the best treatment for this, as well as for trichina, is prophylactic. *Cook the meat.*

Another Plea for State Medicine.—On the day our delayed cold weather arrived, a manly little chap came to my office with a note from his mother requesting some medicinal trifles. The little man was clad suitably for cold weather except for one thing—he was barefooted.

"Hello, Eddie! Where are your shoes?"

"Daddy got sister some, but he says he'll have to sell a yearling we was aimin' to keep to get me some. Daddy told ma he would sure have to get up a little money for you too, before any more of us got real sick."

Utterly unconscious that he was revealing family affairs, little Eddie resumed: "Daddy's gone to see what he can get for it now. The boll weevils ate up all our cotton an' 'taters ain't worth nothin'. We'd 'versify crops some more if daddy had the money."

May God, regardless of man's various conceptions of deity, bless you, little boy, and cause the light of His countenance to shine upon you, candid little hope of the coming race. Daddy means well and talks for better public roads and schools, but he overlooks a bet. He does not realize that the physical care of his family rests upon the poor foundation of individual good nature in case of adversity. Neither does he realize that the individuals depended upon live under the same economic stress as he, and that the assumption by them of the major part of

society's load is a heavy burden, especially with quinine still going up.

A. L. NOURSE.

Sawyerville, Ala.

PYORRHEA AS A CAUSE OF NEPHRITIS

In September, 1914, Dr. A. J. Schneidenbach referred to several cases of rheumatism treated with emetine. I wonder if it occurred to the readers of CLINICAL MEDICINE why emetine did the work? Doubtless, if he had examined the mouths of his patients, he would have found that they had Riggs' disease, or pus cavities of some kind, in their mouths.

I want briefly to describe a case of pyonephritis and albuminuria due to Riggs' disease. In October, 1915, I was called to see a lady of fifty-eight, with a history of having been treated several years ago for tuberculosis of the right kidney. Of late her husband has had the idea that she was using alcohol because he would find her in such a nervous condition when he came home from the office. She would say she was tired of life, complain of feeling unwell, and frequently she was found unconscious.

On examination, I found all the symptoms of Bright's disease, in addition to many bruises received from falling. Urine examination revealed pus and albumin in abundance, and I felt that I had a case for the undertaker shortly, and told the husband that I did not see much hope for her. Her mouth was one mass of pus, there being not a single tooth with a healthy gum around it. Just to satisfy the family that I was doing all I could, I took her to the hospital, even in her uremic and unconscious condition, and ordered emetine, gr. 1-2, given her subcutaneously while fluid extract of ipecac, was to be employed as a mouth wash.

The next day I gave her a bacterin containing the following organisms: streptococcus, 50,000,000; pneumococcus, 50,000,-000; staphylococcus aureus, albus and citreus, each 100,000,000; and bacillus coli, 100,000,-000. These were all administered in one injection. I continued this treatment (emetine and bacterin) every day or two, and in one week she was able to sit up, when she was removed to her home. The treatment was thereafter continued at intervals of three to six days.

On December 10, 1915, I examined the urine for the last time. All traces of albumin had disappeared, and pus had been absent for several weeks; also, every tooth was

solidly fixed in a healthy gum. When last seen, several weeks ago, this woman was in perfect health and her mouth as clean as that of any healthy person could be. Her husband is the manager of one of the largest department stores in Baltimore, and her case is the wonder of the day.

Tell me that Riggs' disease doesn't kill, and I will show you a number of cases of supposed Bright's disease, of pyorrhoeic origin, which have come under my care within the last few years, and where the patients have died. We have in the treatment briefly outlined, a cure for many cases of Bright's disease, rheumatism, and neuritis, so called; and I will go still farther and say that I believe many cases of arteriosclerosis are due to mouth infection and can be relieved, if not cured, by this line of treatment.

NEWMAN H. D. COX.

Arlington, Md.

A CHANCE TO HELP

Dr. W. S. Randolph, of Oakhurst, Texas, a regular practicing physician, seventy-seven years old, writes that he has recently lost both of his horses and now has no money to buy new ones. This aged practitioner seems to be very deserving of help, and I know would appreciate anything that any member of the "family" might feel like sending.

ARE YOU PROUD OF YOUR DISPLAY?

A prominent Chicago State Street merchant, when asked what he considered his most valuable advertising-medium, promptly replied, "My window display."

Continuing, he said: "There is no question but that my window display produces a big percentage of my business. A few years ago, I labored under the delusion that my liberal advertising-space in the newspapers would bring in the public to my store. I thought it was sufficient to get the public to my store. I knew I had a good stock, thought I had a pretty-good-looking establishment, and, with some samples of my products in the windows, believed that I was a progressive merchant. However, one day on which I had run an exceptionally large advertisement in the morning papers, I was standing in the afternoon near the front of my establishment and observed several people deliberately walk to my window, then, after a brief survey, turn hastily away. I certainly became interested and remained to review the situation for an

hour. The result of an hour's observation was, that not more than one out of thirty people who had stopped at my window had entered the store.

"I formed a hasty conclusion. I was sure that all of the people who stopped at the windows had read and were impressed by my newspaper advertisement, judging from the manner in which they approached the show-window. It then became clear to me that my window displays did not hold the attention of the passerby. My advertisements drew them there, but they lost their desire to buy. They were disappointed by the display of my goods.

"In a very short time, I had workmen completely remodeling my store-front under the direction of an expert, and my eyes opened wide when I observed the transformation—paned plate glass—draped drops—mahogany interior woodwork—rich, tasty decorations—an abundance of illumination from hidden sources. The effect was handsome and the arrangement practical.

"From that time on, I've been 'getting them'—at least one out of every ten who stop at my windows comes in. Better, yet, I get a better price for my merchandise, because the surroundings greatly enhance its value. My 'fixup' was the best investment I ever made."

Here, doctor, is a parallel to your case, illustrated by a practical and logical case. What do you sell? Your services, of course. Do you advertise? You certainly do; that is, in many different ways. You say that your work is your best advertisement.

Reflect, does the prospect new patient who came to you through a former patient call again, in every instance, after the initial examination by you?

If not, why not?

Look about you. Perhaps your new visitor felt uncomfortable in your reception room—it was not inviting—the surroundings had an air of dinginess—there was a lack of harmony—showed signs of carelessness—what not?

No doubt you have had the experience of quibbling over the fee. The patient was not favorably impressed by your surroundings: these were mediocre, did not have the furnishings and the atmosphere of prosperity of the modern, up-to-the-minute office—which fittings in themselves convey the suggestion of substantial fees.

Dress up, as did the State Street merchant; let your equipment be your silent salesman, your ethical advertiser, your *prestige pro-*

motor, a medium through which you sell your services and make your patient satisfied with the fees to which you are entitled.

No investment could bring you better returns.

"W"

Illinois.

[This article was sent us by a reader who wishes to remain "incog." I am sure you will agree with me that it is full of good sense; but—do you intend to take his advice? Don't you think it would be profitable for you to do so?—ED.]

WHAT WOULD YOU ADVISE?

I will appreciate an opinion from you at earliest convenience regarding the following case. Would also appreciate opinions of readers of this journal. I notice several letters in the March number regarding the Harrison anti-narcotic law, but none relate to just such a case as I have in mind.

I know a physician, of excellent character, an honor to his profession in the district where he lives, who, owing to a strenuous practice in a broken country, became neurasthenic in the year 1900, completely breaking down. He began using morphine, in that year, for insomnia, which was overthrowing his reason. The result was magical; he slept well and appeared to be in good health when under the influence of the drug; but after two years' use of the narcotic went to a sanitarium and had it withdrawn. Insomnia and mental inertia returned and continued after two years' residence in the sanitarium.

He came out and went on a farm, but after about five years without the drug he was still unable to do anything. His wife threatened to abandon him with their three children, which he almost worshipped. He went back to the drug. Results magical—slept well, ate heartily, and built up a thriving practice, until the Harrison law came in. Then he went to a hospital and took the Lambert-Towns treatment; but after one year's residence on the farm without the drug he is still unable to do anything on account of insomnia and melancholic neurasthenia or neurasthenic melancholia.

I might have said his family has forsaken him, calling him "an old drug fiend." The country doctors ridicule him, and this poor man now prays for the government to send him to an institution for life or humanely execute him, religious scruples alone preventing him from suicide.

His fortune gone, forsaken by family and friends, no rest night or day, what is this poor mortal to do? He seems to be worse than "the man without a country." I am interested and would appreciate any advice.

"H."

Missouri.

[Do any of our readers care to comment? The letter is an anonymous one, published only because of the problem presented, which is not unlike that of many other narcotic addicts.—Ed.]

BEWARE OF THESE SUBSCRIPTION SOLICITORS

A number of physicians have been defrauded by men professing to represent the United Students' Aid Society, associated with the Publishers' Association of America, with headquarters at 625 Travelers Building, Richmond, Virginia. We have been sent receipts for subscriptions to CLINICAL MEDICINE paid to a representative of this organization, for instance, to one I. D. Farr. No money has reached us, either from Farr or from the United Students' Aid Society, and letters addressed to the latter have been returned to us undelivered.

This concern apparently is doing business under a number of names; for instance, The Cornell Educational Association, the Michigan Educational Association, and the National Society of Universities.

We warn our readers to be on the lookout for these traveling subscription solicitors. At the present time, we employ few field solicitors for our journal, and if any such person represents himself as authorized to accept subscriptions or collect in our behalf, ask his authority for so doing. He can supply it.

"ARMA VIRUMQUE CANO"

It is with interest that I read your editorial entitled "Arma Virumque Cano" in the March issue of CLINICAL MEDICINE, and I must say that it is good reading, indeed.

One portion of the writing is of particular interest to me, namely, that dealing with the negro question in regard to American warfare. This is a vital point. "How about the southern states, with their huge negro population?" I ask the same question.

Universal armament is surely coming, and I heartily concur in your belief that "the effect will prove beneficial." The negro, like other persons, is touched by discipline

and, for the most part, respects law and order in a remarkable way, when we take into consideration the treatment he receives at the hands of some of the more fortunate races. The treatment of the negro, in regard to enlistment, military service, and so on, has not, in my opinion, been altogether just, and I think that all well-thinking people in this country have the same opinion. He has, beyond a doubt, shown himself capable as a soldier and has fought well for this country.

There are thousands of capable negroes who would readily enlist and would be delighted with any military training given them. However, I think that negroes are less desirous of enlisting now than they have ever been, and in doing so now they would consider a solemn declaration from the government, that they would not be promptly and entirely mustered out of service at the expiration of any war, perfectly in order. Out of 84,365 men engaged in national defense, according to the last census, only 4761 are negroes; and, yet, they comprise one-tenth or more of our total population.

I am of the opinion that CLINICAL MEDICINE is very fair to the negro. I have subscribed for it since my later school-days, and have often noticed evidences of fairness toward the colored brother. However, there is one thing that I should like to see, namely, that CLINICAL MEDICINE use the capital N in Negro. All unprejudiced people will agree that the word Negro is in the same class as the Jew, Irish, Italian, German, Greek, and so on. It is gratifying to note that so many departments in our national government have taken this stand, and especially in the census department, where in its "Bulletin on Negroes in the United States," capital N is used throughout. Such is entirely correct and shows the absence of ill feeling.

Your editorial is a good one, and rich food for thought.

ROBERT A. DEANE.

Victoria, Va.

[As our readers have of course noticed, we have avoided the use of capital letters, as far as possible, and this is the general tendency in the best journals throughout the country. The word "negro" means black, and is generally used to include all colored men, irrespective of birth-place or race. Possibly, with the growth of race-consciousness, it is taking on a meaning comparable, in a way, to such words as Caucasian or Jewish.

We submit the problem to students of language.—ED.]

POSITIONS IN THE GOVERNMENT SERVICE

There are many physicians who would like to get into the government service. Here is a good opening:

There will be an open competitive examination for Chief Statistician for Vital Statistics on April 25, 1916, for men only; eligible to receive position at a salary of \$3000 a year.

Also, there is to be an examination on May 3, 1916, for assistant physician. This position draws a salary of \$1400 to \$1800 a year.

Anyone interested may address, for details, the United States Civil Service Commission, Washington, D. C.

THE QUICK AND RATIONAL RELIEF OF DYSMENORRHEA

This is for the doctor on the firing-line. Doctor Burdick has written me, saying, "By all means give us an article on dysmenorrhea." So, here goes; and I shall endeavor to make my message as brief and concise as a telegraphic dispatch and as luminous as a mountain burning at midnight.

Dys—difficult; *menorrhæa*—the menstrual flow. Besides this, as we know, it is attended by the most excruciating pain.

Quæry: What produces the difficulty, and why the discomfort and pain?

The upper part of the uterus differs from the lower in more ways than merely in shape—the two halves not always acting in harmony. When the upper portion is ready to expel its contents, it remorselessly exerts its great propulsive force, in an attempt to drive through an almost impervious lower canal the load of which it is trying to get rid.

The lower portion, a segment under the control of another branch, or pencil, of the pentapointed pudic nerve, resists this intrusion and, instead of opening the door to the outer world, stubbornly refuses to let the uterine consignment pass through and out.

This means war—means pain and distress before the final occurrence of bloodshed; for, truly, this way does the womb shed its bloody contents. Remedies that act upon the upper portion of this viscus do not influence in the same way the lower section; and the reverse is also true.

The clinical picture: The patient is in great pain, and often pale, she is covered with cold perspiration; the whole skin seems bleached and feels cold to the touch; sometimes convulsions or syncope attend these attacks.

The mechanics: It is the attempt, on the part of the upper section of the uterus, to drive its contents, by means of powerful and persistent contraction, through a small canal, which the lower segment stubbornly resists.

The therapeutics: First of all give the suffering woman one granule of glonoin of 1-250 grain, directing her to chew it between front teeth, but not to swallow, so as to let the medicine be absorbed directly from the mouth. A few minutes later, give one granule of hyoscyamine of 1-250 grain, this to be taken in exactly the same way. Then, immediately after its absorption, administer one standard granule of anemonin (gr. 1-12^s). Leave with your patient the following: Stir into half a glass of water 5 drops of pulsatilla, either the homeopathic mother tincture or Lloyd's specific medicine, and direct her to take one teaspoonful of this mixture every half hour, until relieved. This relief will come soon, almost like a miracle. To compare a patient, thus treated, with one doped with opiates, will be a revelation to you; and not alone so far as the woman's appearance today and tomorrow is concerned, but for as long as the bad effects of the opium-treatment followed the one receiving it. Not infrequently inside of an hour the one treated as I am here telling you how to treat your dysmenorrhea victims will hardly show evidence that she has been ill so recently, even though she was on the verge of a convulsion when medication was started. Moreover, there are no bad after-effects.

The philosophy: The glonoin, or nitro glycerin, containing, as it does, the nitryl radicle (NO_2), promptly and powerfully dilates all the capillaries. The hyoscyamine likewise does this, but tends to render permanent the rapid, though fugatory, action of the nitroglycerin. While the blood of the general circulation is thus being diverted from the pelvic viscera, the anemonin, which has an elective action upon the lower uterine segment, overcomes the latter's contractile resistance thus far offered, greatly relaxes the grip of the circular fibers, and so causes the gates of the canal to be opened. Thus our pulsatilla, through its potent principles, causes the smoothing out of the passage-way, with its corrugated mucosa, and the relaxing of muscular resistance, so that now the flood may pass freely and unobstructed.

This is the story,
This is the song,
The whole is done safely,
It does not take long.

If you have never tried this, there is a pleasant surprise in store for you as well as for your fortunate patients.

C. S. COPE.

Detroit, Mich.

[The "potent principle" of pulsatilla is anemonin, a camphoraceous, crystalline substance, which assuredly acts beautifully in these cases. Being a definite, dependable substance, I greatly prefer it to its parent-substance for every purpose for which the latter is indicated. To relax the uterine spasm, I like the glonoin-hyoscyamine combination which Doctor Cope uses with such success. Of course, an infantile uterus may require physical intervention—dilatation of the os, for instance.—ED.]

TWO INTERESTING CASES: SECRETING MAMMARY GLAND IN THE MALE; SPONTANEOUS VERSION OF FETUS

I would like to submit briefly the history of two cases which may be of interest to some of your readers:

First case: Mr. G., age 17, reported to me with a pain in his left chest. This young man was physically a well-developed specimen of young manhood. Upon having him strip to the waist, I was very much surprised to find a perfectly developed mammary gland, which, upon massage, excreted normal colostrum. This young man stated that this "tumor" had been bothering him for over a year. The right chest was normal, the male organ was well developed, and both testicles were normal and descended into the scrotum.

The young man stated that he had no desire for the company of the opposite sex, and that he had never had intercourse. Upon careful and thorough examination I could find nothing abnormal for a healthy young male.

Second case: Mrs. S., age 23, primipara. Period of gestation normal; went into labor at 11 p. m., eight days previous to estimated time; labor was rather slow, the pains coming regularly but not of very great force. Vaginal examination was made the following day at noon. Cervix dilated to admit index finger freely. Examination again at 6 p. m., the cervix admitting two fingers; sagittal suture and fontanelles palpable, disclosing and confirming abdominal diagnosis of left occiput

anterior. Head well down on perineum, pains coming stronger and slightly closer together.

When I examined again, at 11 p. m., I found both feet presenting!

The baby was delivered the following night at 7 p. m., as a double footling presentation with prolapsed cord. The baby was in good condition, but the woman suffered a second degree median tear, due to rapid extraction to prevent fetal asphyxia. The mother and baby are thriving, and are in good condition at present—three weeks after delivery.

I would like to hear from some of my professional brothers having had similar experiences.

W.M. G. THURBUR.

Los Angeles, Cal.

DISPENSING NARCOTICS IN INDIANA

In the February number of CLINICAL MEDICINE, page 110, we discussed editorially the efforts being made in Indiana to prevent physicians from dispensing narcotic drugs. The matter has been taken up by *The Journal of the Indiana State Medical Association*, whose virile editorial on this topic we reproduce herewith:

Considerable controversy has arisen concerning the right of physicians to dispense narcotics, and quite recently many physicians have been advised by druggists and drug inspectors that members of the medical profession are not permitted under the law to dispense narcotics. A communication published in this number of THE JOURNAL calls attention to some of the court decisions covering the disputed point.

It is very evident that the State Board of Pharmacy is stimulating the agitation. The contention is that the word "administer," as found in the law, and the word "dispense" have two separate and distinct meanings. In other words, it is contended that the physician would be permitted to administer, meaning to give either hypodermically or orally, one dose of a narcotic drug, but would not be permitted under the law to leave another dose of the drug to be given later to the patient, it being held that in the first instance the medicine is being "administered," and in the second instance, being "dispensed."

As will be noted from the decisions referred to in the correspondence of Doctor Smiley, found in this number of THE JOURNAL, the courts have interpreted the word "administer" in its broadest sense, as meaning to give, furnish, supply, provide with, or cause to be given, furnished or supplied. This interpretation is in keeping with the definition of the word "administer" as found in the latest Webster and other dictionaries. Thus, Webster defines "administer" as follows: "To dispense; to serve out; to supply."

The attorney-general for the state of Indiana, under date of January 28, 1913, in answer to a question concerning this matter, said: "I beg to say that the provision prohibiting any person,

except a licensed pharmacist, to retail, sell or give away cocaine, etc., does not prohibit the *bona fide* use or administration of such drugs by a licensed physician, dentist or veterinarian in his practice." The opinion is sustained by the present attorney-general of Indiana in a communication of recent date.

A number of decisions by United States courts have settled the question of the right of physicians under the federal narcotic law to dispense narcotics in any quantity, provided such dispensing is to meet the immediate needs of the patient and is made in good faith, and the narcotic is given as a medicine.

Considering all of the facts and the advices we have on the subject, we do not believe that physicians should be alarmed over the activity of the Board of Pharmacy, inasmuch as the contention seems absolutely groundless. However, it may be well, in passing, to call attention to the fact that when the drug-act was under consideration before the Indiana legislature the physicians and druggists in a joint meeting were given a hearing before the committee, and at that time this very question arose and it was agreed among all present that the words "administering" and "dispensing" meant one and the same thing.

It is unfortunate that the Board of Pharmacy seems inclined to take unfair advantage of what even under the most favorable construction for them would be a technicality; and, yet, as we have pointed out before, there is abundant evidence to show that there is a widespread agitation among pharmacists to cripple the profession as much as possible if such action holds out the slightest possibility of benefiting the pharmacists. We do not believe that these efforts ultimately will prove advantageous to those who are putting them forth.

This editorial is supported by a mass of legal and other testimony, giving the court rulings and other pertinent points, in letters written by Doctors Smiley, Thorburn, and Taylor. Every Indiana physician should read carefully the evidence submitted in this number of the Indiana *Journal*.

A GERM SYMPOSIUM

Once upon a time, in the realm of Biology, there convened an assembly of microbes, to consider and discuss their relationship each to the other and their status as to disease in humans. On motion of *Staphylococcus*, *Tuberculosis Bacterium* was voted chairman of the convention. Upon taking the chair, *Tuberculosis Bacterium* made the following remarks:

"Fellow germs: I feel much honored by the choice you have made for presiding officer, and I return grateful thanks. As I understand the call for this convention, it is to consider our relationship to each of our different species and our office and functions in respect to diseases in man."

"The prevailing theory of disease among the wise men devoting themselves to this

problem is, that for every disease in the human there is a germ that is the exciting cause thereof, a germ peculiar to that special disease; even though not every one has as yet been demonstrated. One of the learned historians of our species has stated the following:

"It must be remarked, furthermore, that even the typical forms (of bacteria) recur only under quite definite conditions, and that they vary according to the nutrient media in which any particular bacteria are growing. This holds true, indeed, to such an extent that the prevailing form of a given species may be assigned to one group or another, according as it has been taken from one or another medium.

"One of the greatest services Koch has rendered to bacteriology is his invention of pure culture, by means of which such isolated colonies, originating from a single germ, can be cultivated at will and obtained free from admixture with germs of other kinds. Such pure cultures, reared under perfectly similar conditions, always agree in form and physiologic activity. But this is not real constancy. The similarity does not depend upon the invariability of the bacteria, but upon the fact that the conditions of life suffer no alteration. If the conditions fluctuate, the bacteria will also vary in form and physiologic activity. . . . The value of the individual shapes fluctuates very greatly. At times it is the transitory form, at other times, the common nature form that is deemed typical. On this account, it is superfluous, at least in the beginning, to determine, with rule and compass, the regulation breadth or length of a species, while general morphologic questions remain unsettled. . . . Bacteria depend for their provision of food and energy upon the conditions of nutrition. If these conditions remain constant, one of three things comes to pass. Either the bacteria change in form and action and adjust themselves to the new conditions, or they form spores, which preserve the species until better times for them to return, or else they fail to adapt themselves at all and, so, perish."

The president further remarked: "The same historian of us germs has stated in substance as follows:

"The tubercles lodged in the leguminosæ and some other plants have entered into an intimate union, or symbiosis, with such growths, and by our aid these plants are able, even when growing on poor soil, to avail themselves of atmospheric nitrogen. By

inoculation of the soil with material taken from the root-tuberles and likewise by the cultivation of those useful plants upon which these tuberles thrive and are symbiotic (or in partisanship with), the yield of many poor soils may be considerably increased without the application of manure."

"Dr. Henry Plotz, in his biologic studies, has identified the bacilli found in Brill's disease and in typhus fever as being two different strains of the same microorganism. The first historian quoted says of my own family, that of the Bacteria:

"I have arrived at the definite opinion that the tubercle-bacillus is the parasitic growth-form of a pleomorphic mold, and is not a true bacterium at all, but, in respect to its morphology, is closely related to the ray-fungus. This has been confirmed by Coppen Jones."

"In view of the divergent and contradictory theories as to our biological status and work in nature, we microbes have met in council to consider, and, if possible, determine our actual position in the realm of biology. The convention is now in session, and it is up to the membership to express their views."

Streptococcus having obtained recognition from the chairman, proceeded to remark as follows:

"Honored chairman Tuberculosis Bacterium, and microbes in general: There can be no question that tubercle bacteria are associated with the human race, both for good and evil, but I protest against the thought that they are the sole cause of tuberculosis in mankind and the lower animals. Are we not also as much in evidence in the disease when that material which humans call pus is produced as a result of destruction of live tissue of the air-cells?"

Just here Staphylococcus interrupted Streptococcus and remarked as follows: "I, too, have as much right to be recognized as a causative factor in the role of tuberculosis as Tuberculosis Bacterium and my fellow germ Streptococcus. We three are always found associated in tuberculosis."

Here Pneumococcus, having received recognition from the chairman, proceeded to state: "I protest, honored chairman, against the assumption both of Streptococcus and of Staphylococcus, for, if their contention is sound, then they also are concerned in the production of pneumonia, of which all biologists admit I am the causative factor."

Here also arose Pyogenic Bacterium and remarked: "I would ask of my honored

relative and this collection of germs a few questions, namely:

"First: Do our comrades Streptococcus and Staphylococcus exist in putrefactive material merely as destructive agents in the animal organisms, or do they dwell there simply to satisfy their own need of energy and in order to proliferate?

"Second: Do we germs (called 'specific,' by the humans) vary in our capacity for the production of disease?

"Third: Do our so-called 'specific' disease-germs affect all animals and humans with the same typical disease?

"Fourth: Does a 'specific' disease-germ cause only one disease?"

Here one of the Saprophyte microbes, having obtained recognition from the chair, answered these queries as follows: "Honored chairman and fellow microbes: Our associate member, Pyogenic Bacterium, has favored us with four queries for our elucidation. It is a hard task he has given us to perform; however, I will do my best to answer his queries.

"With regard to the first query: 'Do we germs exist in humans and animals solely to produce disease; or do we inhabit organisms simply to carry out the first law of nature, self-preservation?' I believe our comrades, the germs of putrefaction, exist only where there is dead organic material to be removed. Like the buzzard they simply act as scavengers; but they also, to a certain extent, adapt themselves to their environment. Living cells, when they become enfeebled through errors of hygiene and poor sanitation, lose their protective power against our attacks.

"The second query is: 'Do our so-called 'specific' germs vary in their capacity to produce disease?'

"Among the humans who have experimented in this direction, Buchner was the first to succeed in demonstrating that the deadly (to humans) so-called Anthrax bacilli could be so modified artificially as to render them innocuous to humans, and cause them to behave like perfectly harmless saprophytes. The same applies to chicken-cholera, as proved by Pasteur.

"The third query is: 'Do the same 'specific' disease-germs affect all animals with the same typical disease?'

"I would answer, *Nol Take* the bacilli of diphtheria, for example. These may occasion local diphtheria, or paralysis, or acute blood-poisoning. Again: The bacteria of erysipelas may bring about erysipelas of the

skin, but they are likewise able to produce inflammation and suppuration of the lung tissues.

"What I have already stated will do for an answer to the fourth query."

Staphylococcus Pyogenes Aureus having obtained recognition, proceeded to say:

"Fellow microbes: It has been in the power of our species of germs, by our intimate connection with many forms of disease, to obtain the following information:

"We have found that, when we by our presence so affect intestinal human tissues that they lose their protective influence against us and other germs, such bacteria as saprophytes may enter these tissues and even penetrate further into the body, as for instance into the nearest lymph-glands. The common bacilli coli communis, my associates, can do this, as they well know. But they also know that, by change of environment and conditions of life, they are modified in structure and constitution to such an extent as to become less harmful to humans.

"Were our enemies, the doctors, to recognize more fully that certain drugs have this modifying influence upon our wellbeing, we should have a poor outlook for our future existence."

Just here Bacillus Pyocyanus, receiving recognition, addressed the convention as follows: "Tuberculosis Bacillus and microbes assembled: We would wish to contribute our germ unit to this discussion, and our conception of disease, and the role played by us microbes. Our view is, that the internal condition of an organ, a tissue or a cell, whether in plants, animals or humans, alone determines the character of diseases and our status as germs. This is the view held by that human philosopher Virchow. We know that this position is opposed to that held by Pasteur and Koch—men who, opposing the conception of Virchow, have divided the thought of our enemies, the doctors."

Plasmodiophora Brassicæ here took the floor and proceeded as follows: "We believe from what has been stated by our fellow germs, that there is another condition necessary to our proliferation. The family of cells in the universe, of which we germs are members, are the morphologic units of all organic nature. At the death of cells, they are resolved into effete material, very deleterious if not removed and disposed of, but retained in an organism.

"The vital functions of cells are as follows: Contractibility, irritability, and automatism, reception of nutritive material, and its

assimilation, metabolism, secretion, excretion, and, finally, reproduction.

"All cells are sensitive to, and influenced by, their environment. They are repellent to deleterious influences in proportion as they possess that force or principle which we call vital. On the contrary, as they lack this force, they are open or subject to the invasion of disease. This applies in greater force to us germs, especially when those abominations, debilitating drugs and chemicals, are forced upon us by the doctors.

"During our life-history, we are favored or injured by our environment and circumstances over which we have but slight control. Take as an example cells of animal tissue exposed to contact with the atmosphere and subject to its vicissitudes, such as low temperature and sudden changes, their force (we call it vital) being reduced to a very low ebb for the time being; and in such cells, when we invade the tissues of animals, there is at once inaugurated a conflict; which side will come out victorious depends on various circumstances.

"If the animal cell has sufficient resistance, then we microbes are a failure. On the other hand, should the vitality and resisting power of animal or human cells be very low and other circumstances favorable, then we microbes are in our glory."

Bacillus Coli Communis now arose and addressed the chair and convention:

"Chairman and fellow microbes. In view of known facts and what has been stated in this convention, I wish to offer a resolution for the acceptance of this honorable body. First, however, I would remark that we may consider that distinguished individual General Gorgas, our most doughty enemy, inasmuch as he has shown that sanitation and hygiene render it impossible for members of our glorious race to proliferate and multiply. Our only hope of a continuation of our kind is, to seek out and make our habitation among the slums of the cities and other unsanitary places where we can develop in peace and plenty, undisturbed by those ridiculous highbrows.

"Therefore, be it resolved: That we of the microbe world earnestly protest against the pernicious interference of sanitarians and the efforts of the rulers to change the condition of the slums, our preempted homes, considering that we are the work of the Creator as much as are humans; therefore, have the same right to live as have they."

Just at this crisis a crash startled them all and a vile and pernicious odor filled the

convention, which caused a most rapid dispersion of the assembled members.

At that moment I awoke with a start, to find that the convention had been merely a dream story, and the only fact was the breaking of a bottle of formaldehyde, which had fallen from a shelf over my head and filled the room with its fumes, to my intense annoyance.

Thinking my dream might interest some members of our noble profession, I submit it for publication.

A. T. CUSZNER.

Gilmore, Fla.

TRAINING FOR EYE- AND EAR-WCRK

Physicians who wish to become internes in the Charitable Eye and Ear Infirmary, at Chicago, can take an examination on May 6 in the cities of Anna, Carbondale, Charleston, Chicago, DeKalb, East St. Louis, Elgin, Jacksonville, Kankakee, Lincoln, Macomb, Mt. Vernon, Normal, Olney, Peoria, Pontiac,

Rockford, Springfield, Urbana, and Water-town. Examination will consist of the following parts, weighted as indicated:

| | |
|---|---|
| Training and experience | 2 |
| Medicine, surgery, eye, ear, nose, and throat | 8 |

License to practice medicine in Illinois is required. This year's graduates are admitted to examination.

IT'S ALIVE

CLINICAL MEDICINE has become more to me than a mere medical paper. It's "alive," and the only live medical paper I know or want to know.

J. M. G. EWING

St. Vincent, B. W. I.

[Doctor Ewing shows his interest in *our* journal in the most practical way—by sending us suggestions for making it better.—ED.L]

IMPORTANT ANNOUNCEMENT

Readers of CLINICAL MEDICINE have doubtless seen the grossly exaggerated and untrue newspaper reports of an "explosion" in one of the buildings of The Abbott Laboratories, which was alleged to have "wrecked" this property, and no doubt many of our friends and customers are under the impression that we have suffered great loss.

The truth is that a small fire with ignition of gases in a closed room took place on the top floor of our manufacturing building shortly after midnight, April 21. The damage was slight, consisting mainly of broken window panes, some loss of glassware, and cracking of temporary partitions. In the aggregate, the property loss was comparatively inconsequential. This building is of reinforced concrete and brick, and is fireproof. No one was hurt, our plant, and important apparatus were not seriously injured, the machinery not at all, and the following morning our entire force went to work as usual.

In view of the absurd newspaper reports of "war plots," enormous profits, and the like, we wish it understood that The Abbott Laboratories have not manufactured and are not now engaged in the manufacture of ammunition or explosives of any kind for the warring nations, our sales abroad consisting entirely of medicinal preparations such as we ordinarily sell to our customers here at home. Our prices remain as low as are consistent with Abbott quality—the best. Our profits are, as they always have been, very modest.

I have received many expressions of sympathy from friends, customers, and acquaintances, all of which I appreciate very much. Thank you all. It gives me pleasure to assure you that everything is all right in Ravenswood, and that our business is going on as usual—only bigger than ever.

W. C. ABBOTT.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

OF the various heart disorders that I have observed in my practice, mitral stenosis is the one that most influences the uterus. Be it congenital or secondary to rheumatism, it is notably the disease of passive congestions, the affection in which circulatory disturbances most early manifest themselves in remote organs. Painful dysmenorrhea, menorrhagia, and metrorrhagia are common results of mitral stenosis. Next in order, according to my observation, come mitral insufficiency, and then diseases of the aorta. I believe that menstrual disturbances occur in more than half of the cases of heart disease.

The first manifestations usually occur at puberty, the cardiac lesion presumably not having been noticed; hence, great is the surprise to see that the establishment of the menstrual function is attended by difficulties. There may be profluse loss of blood, and dysmenorrhea may be present; the menses also may be painful and irregular. Many doctors, however, seek the explanation of these symptoms in the tuboovarian region, or they may suspect chlorosis. The general traits of cardiac chlorosis may be present: pallor, dyspnea, amenorrhea, nervous irritability, dyspepsia, constipation, even the hemic murmurs at the base of the heart or in the cervical vessels. After a few regular menstruations or even after the first menstruation, there comes a period of amenorrhea lasting several months. This is succeeded by hemorrhagic flows, now abundant, now barely appreciable, and of such irregularity that the young girl is uncertain whether or not they correspond to a menstrual epoch.

During her entire genital life, a cardiopath is subject to these various accidents. Mitral lesions predispose to hemorrhages much more than do aortic lesions, because the former favor passive congestions, while the latter are accompanied by anemia. Two conditions are essential for the production of hemorrhage: first, a comparatively good general condition of the patient; second, and still more important, is a heart of sufficient vigor to coun-

teract, successfully, the lesion. When the heart weakens, when edema and dyspnea appear, in a word, when failure of compensation occurs, not only the hemorrhages but also the menses are suppressed. There is, then, a period of amenorrhea which lasts as long as does the failure of compensation.

The menopause may be early in presence of mitral lesion; in cases of aortic lesions, the menopause comes late. Owing to the arterial hypertension incident to, and the passive congestions associated with, cardiac disease, together with the arteriosclerosis so frequent in women that have reached the "dangerous age," the menopause is frequently characterized by profuse menorrhagias and metrorrhagias. The menopause over, hemorrhages may occur that are solely due to cardiac lesions.

The practical conclusions to be derived from these observations are these: First, careful examination of the heart is indicated in all menstrual disturbances of obscure origin; second, the treatment of menstrual disorders secondary to cardiac lesions must be directed to the heart, not neglecting, however, to attend to any local uterine lesion that may exist.

I have observed also that there subsists a very close physiologic relationship between the nose and the sexual apparatus. I have looked up the literature on this subject and, judging by what I have observed myself and by the observations of others, I have come to the following conclusions:

1. In a certain proportion of women whose nasal organs are healthy, engorgement of the nasal cavernous tissue occurs with unvarying regularity during the menstrual epoch, the swelling of the membrane subsiding with the cessation of the catamenial flow.

2. In some cases of irregular menstruation in which the woman occasionally omits a menstrual period without the external flow, the nose is involved. At such times, the erectile bodies of the nose become swollen and turgid, as in the period when all the ex-

ternal evidences of menstruation are present.

3. The monthly turgescence of the nasal corpora cavernosa may be bilateral or confined to one side, the swelling appearing first in one side and then in the other, the alternation varying with the epoch. 4. The periodical erection may be inconsiderable and give rise to but little or no inconvenience; or, on the other hand, the swollen bodies may occlude the nostril and awaken phenomena of socalled reflex nature, such as coughing, sneezing, and so on. 5. In some cases, there seems to be a direct relationship between the periodical engorgement of the nasal erectile bodies and those phenomena referable to the head that so often accompany the consummation of the menstrual act. 6. As a natural consequence of the phenomena above described, the nasal mucous membrane at such periods becomes more susceptible to reflex-producing impressions, and is, therefore, more easily influenced by mechanical, electrical, thermic and chemical irritation.

7. The condition (engorgement and increased irritability of the nasal mucous membrane) indicated above, together with the phenomena that accompany it, are also found during pregnancy at the periods corresponding to those of the menstrual flow. There is also reason to believe that similar phenomena occur during lactation and the menopause. 8. Vicarious nasal menstruation is a familiar condition. It may precede the uterine flow or it may occur from suppression of the normal flow. 9. This vicarious hemorrhage may represent menstruation during pregnancy or it may appear toward the close of the menstrual life, or after the removal of the uterus and its appendages. Various nasal hemorrhages also occur in boys at or near the age of puberty. 10. There exists a well-known sympathy between the erectile portion of the generative tract and other erectile structures.

11. The occasional dependence of phenomena referable to the nose occurring during sexual excitement. The data derived from clinical observation are as follows: (a) in a fair proportion of women suffering from nasal afflictions, the disease is greatly aggravated during the menstrual epoch or when they are under sexual excitement. (b) Cases are also met with in which congestion or inflammatory conditions of the nasal passages make their appearance only at the menstrual period or at least are only sufficiently annoying at that time to call for medical attention. (c) Occasionally the discharge from nasal catarrh will

become offensive at the menstrual epoch, its disagreeable odor disappearing during the decline of the ovarian disturbance. (d) Excessive indulgence in venery seems to imitate inflammation of the nasal mucous membrane. (e) The same is true of the habit of masturbation. (f) The existence of uterine or ovarian disease exerts, sometimes, an important influence on the clinical history of nasal disease.

I have found many diseases of the stomach to respond well to hydrotherapy. Here are a few points that the general practitioner can put into practice to considerable advantage in his cases of stomach diseases.

Cold water is more stimulating to the gastric secretions and, contrary to the prevailing opinion, is a better laxative than hot water. Hot water is a better diaphoretic, is more soothing to the stomach, is a better solvent, and is more generally applicable as a remedial agent. The drinking of hot water is attended by the greatest benefit in chronic gastritis, but its use in this way must be limited to those cases in which the motor function is intact. It should be given in quantities of from eight to sixteen ounces one hour before each meal and at bedtime, and should be taken as hot as can be borne with comfort, and be sipped very slowly. It may be used with almost equal benefit in functional conditions associated with normal motor activity.

Externally, cold applications are indicated in acute gastritis and in the control of hemorrhage and vomiting. Hot applications should be employed in gastalgia, hyperesthesia, and chronic gastritis. The Scotch douche is of benefit in neurotic conditions. The essential factors governing a successful hydrotherapy are: an exact diagnosis, a thorough knowledge of the causative influences and of the effect of the remedial agents, and the confidence and cooperation of the patient.

Lavage of the stomach is indicated in the conditions in which the drinking of water is contraindicated. In dilation it is a sovereign remedy. Regarding the use of the stomach-tube, I wish here to quote a few passages from Dr. A. L. Benedict, as follows:

"Don't use the stomach-tube simply because you want to be considered scientific and up to date.

"Don't withdraw stomach contents for examination unless you are prepared to examine them.

"Don't discard external means of physical diagnosis because you have a stomach-tube.

"Don't expect too much from diaphanes, electric buzzers, buckets, complicated tubes, and the like. All of these have their uses, but in general they are available in very rare cases.

"Don't pass the tube without first inspecting the mouth and throat and examining the heart and arteries, and at least inquiring as to pregnancy, piles, and other possible contraindications.

"Don't pass the tube as a means of treatment unless you know precisely what you want to accomplish with it.

"Don't introduce a weight and bulk of water which you would consider injurious if swallowed. As a rule, don't introduce more than a pint at once, and almost never more than a quart.

"Don't be deceived by the ball-valve action of a particle of food or any other cause which may allow water to remain in the stomach. Make sure that you withdraw as much as you introduce, except that you may allow a little for leakage through the pylorus or possibly absorption. Remember that the more a stomach can hold, the less it ought to.

"Don't imagine that the gastric douche will cure all of the diseases of the stomach. You would laugh at a gynecologist who held such a view about the vaginal douche.

"Don't imagine that a stomach is doing well till it can digest plain but varied diet without mechanical interference. Don't speak of a case as cured until the patient can indulge in all the ordinary food without medical aid and without injury.

"Don't let the patient learn to pass the tube himself. This rule holds for his benefit as well as yours.

"Don't fail to use the tube or to have it used when the indications outweigh the contraindications."

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I have often wondered why physicians do not observe patients more, instead of relying entirely on laboratory reports. The appearance of the tongue, for instance, tells us much of the patient's condition and the indications for treatment. *The Indian Medical Recorder* prints the following suggestions:

"A broad, pallid tongue, with a loaded base, says atony, and refers you to a want of action of the entire viscera below. The remedial agents would be, cathartics and tonics, especially those mild but effectual in character.

"A shrunken tongue, pinched in expression.

indicates functional inactivity of digestion, and requires great care in choice of food as well as quality. In this condition of the tongue, we have atony also. It is the tongue of advanced fevers, inflammation of the mucous membranes, and want of assimilation; hence, great caution both as to remedies and food. Here, we must not use cathartics. Mild aperients may be carefully used.

"A contracted, pointed tongue, with dryness and dark fur, is the usual tongue of typhoid fever and other low grades of fever, when all thinking minds would use great care in the treatment and food.

"The dryness or moisture of the tongue denotes the extent of the disease of the intestines, and will point us in that direction.

"A fissured tongue points to the kidneys—either an inflammation or something wrong with secretion.

"Yellow coatings are usually associated with morbid liver and want of biliary secretions, and would indicate mild hepatic and tonics.

"Raised papillæ, bright-red, denote irritation of ganglionic nerves and irritation of stomach, especially the mucous coating. It shows exhaustion, no digestion, and need of rest. *Nux vomica*, 20 drops, and the food to be warm and taken in small quantities. Bismuth and pepsin after food.

"A broad, thick tongue, papillæ not visible, but looking raw, denotes a septic condition of the blood, and points to typhoid fever. It indicates, if deep-red, sulphuric acid; if pale, sulphite of sodium. Liquid food sipped warm, in small quantities.

"Deep dark-red tongue and dark coating indicate a septic condition of the blood.

"Shades of dark-brown and black denote a typhoid condition or a septic condition.

"A pale, dirty fur on the tongue denotes acidity and a septic condition of the system. It indicates sulphite of sodium; but, if the membranes are deep-red, sulphuric acid will be admissible, because it will show an alkaline condition of the blood.

"A contracted, pointed tongue, inability to hold it still, and drawn to one side of the mouth, denotes trouble with the nerves and perhaps of the brain. Requires great care and study of the condition.

"A dry tongue always denotes feverishness, an inflammatory condition, or affection of the nerve-centers of the ganglia.

"A thick tongue and curved, edges upward, denotes atony of the nerve-centers of the ganglia, requiring stimulants, *nux vomica* or strychnine and quinine."

Among the Books

POTTER'S "COMPEND OF ANATOMY"

Potter's Compend of Human Anatomy. Revised by D. Gregg Metheny, M. D. Eighth edition. Philadelphia: P. Blakiston's Son & Co. 1915. Price \$1.00.

This book belongs to a series of the epitome type. Anatomy is a pretty large subject and one which inevitably slips from the memory of any practitioner who is not, by the nature of his practice, constantly kept in contact with applied anatomy. Hence, a reminder of the essential and salient points, especially of surgical anatomy, is rather a welcome aid to the average physician.

It must be said that Potter's "Compend" displays considerable judgment and discrimination in the selection and the arrangement of material. It succeeds in picking out and serving up the really practical and helpful things. The present edition is brought well up to date by Doctor Metheny, who has wisely left the growing details of embryology and histology to the respective textbooks and confined himself to the explanation of gross anatomy.

DOCK: "MATERIA MEDICA FOR NURSES"

Textbook of Materia Medica for Nurses. Compiled by Lavinia L. Dock. Fifth edition, revised and enlarged. New York and London: G. P. Putnam's Sons. 1915. Price \$1.50.

We take it that there is a wide difference of opinion among medical men, and even among the leaders of the nursing profession themselves, as to just how much *materia medica* and therapeutics it is desirable for a nurse to be taught. We confess to a constantly changing opinion on this problem. Sometimes we find ourselves generously, even recklessly, conceding the trained nurse all the latitude she wishes in these matters; at other times, we are conscious of a lurking suspicion that too much detail knowledge of these things does not enhance her practical value, but, rather, operates to the contrary.

However, Miss Dock, who is a graduate of the Bellevue (New York City) Training School, has written a very moderate and, in

our judgment, a very sensible manual for these young ladies of the white cap. The book certainly contains everything about *materia medica* that any nurse can reasonably demand to know or make use of; at the same time, the author has wisely withheld all those complex and abstruse phases that could serve no other purpose than to burden and perplex her mind. She has done it better than we ourselves could have done it—what more can we say in commendation? The present revision brings the book up to the status and demands of the day.

HARDY: "THE FLY"

The Book of the Fly: A Nature-Study of the House-Fly and its Kin. By G. Hurlstone Hardy; With an Introduction by Halford Ross. New York: The Rebman Company. 1915. Price 80 cents.

"The old fanciful dogma that everything existing was actually created 'in the beginning' and 'for a purpose' once was ardently championed as controverting aggressive Voltairean atheism; but it must now be recognized as an unwarranted assumption, deduced from an orthodox doctrine of 'design' which, in itself, seems acceptably agreeable with the idea of unity, consistency, and perfection in creation and the Creator. In fact, the said fanciful dogma never really was an integral part of the Christian Catholic doctrine."

Thus, the author in his opening chapter. All of which rather magniloquent dialectic is for the purpose of establishing the humble premise that the house-fly has no rights that anyone is bound to respect. Having thus demonstrated that the fly has no friends, the author proceeds to hit him hard; and, so, the real motif and subject-matter of the book is a figurative "swat the fly," with reasons why it should be swatted. It is a criminal indictment of the common house-fly, with a searching exposé of its antecedents and "personal" record. We may be joking; but, the fact is, Mr. Hardy has produced a most timely and instructive little brochure, showing how the house-fly is a menace to the health of the individual and the entire com-

munity, and in this task he has united the unsurpassed knowledge of a naturalist with the personal experience of a practical hygienist.

BROWN AND MURPHY: "PRACTITIONER'S ENCYCLOPEDIA"

The Practitioner's Encyclopedia of Medical Treatment. Edited by W. Langdon Brown, M. D., and J. Keogh Murphy, M. C.; with an Introduction by Sir Thomas Clifford Albutt, M. D., F. R. S. New York: Oxford University Press. 1915. Price \$8.00.

Here is an excellent encyclopedia of medical treatment, in a single, not too bulky, compact volume, up to date, not of inordinate cost, and written throughout by men of wide understanding and experience. The work is divided into two parts: first, methods of treatment; and second, agents in treatment. In the first part, certain general forms of treatment are dealt with, followed by the treatment for the various disorders arranged in a systematic manner. Details of surgical operative measures have been excluded, the indications for such surgical intervention alone being given and the general principles of surgical treatment laid down. In the second part, are described the action and uses of different drugs, arranged in classes, as a guide for the practitioner in the principles and methods of medical treatment with the aid of these agents.

CROSSEN: "OPERATIVE GYNECOLOGY"

Operative Gynecology. By Harry Sturgeon Crossen, M. D. With 770 original illustrations. St. Louis: The C. V. Mosby Company. 1915. Price \$7.50.

This work is frankly devoted to operative treatment alone; and the author has aimed to present this phase of gynecology in all of its bearings—the indications for operation, the selection of the precise form of operation that is likely to be best suited to the individual case, the technic of the procedures, and the difficulties liable to be encountered thereunder. All extraneous matter, such as general surgical procedures, operations on adjacent organs, and so on, has been omitted, in order to keep the volume within the limits of convenience and portability.

The author considers that gynecologic surgery is entering on a new stage of development. To the past, he grants the invention of methods; to the future, he assigns the more

scientific task of adapting operative methods to the pathology of the individual case. It is to the exposition of this modern aspect of gynecology that Doctor Crossen dedicates his book. Selective treatment is the keynote of the work; and there is no question but that it will aid the practitioner very materially in the elucidation and advancement of this important feature of gynecologic surgery.

STEDMAN: "HANDBOOK OF MEDICAL SCIENCES"

Reference Handbook of the Medical Sciences. Edited by Thomas L. Stedman, A. M., M. D. Complete in 8 volumes. Third edition, completely revised and rewritten. New York: William Wood & Co. Price, per volume, \$3.00.

Each new volume of this revised work that comes to our attention makes us think that the alphabetical range which it covers is the most important and interesting that has yet been covered in the series. Of course, that is not really so. Taken all in all, the several volumes are of about average quality as to significance and interest. Probably the effect upon our psyche is due to the splendid maintenance of quality and vigor in the treatment of the subjects manifested in each successive volume.

The present, fifth, volume takes in the letters H to L, and includes such engrossing subjects as the Heart, Hemolysis, Hernia, Hospitals, Hygiene, Immunity, Infection, Intestinal Diseases, Joints, Kidneys, Labor, and Larynx, besides many others too numerous to enumerate. We have but skimmed the pages and lighted, here and there, upon a few of the most prominent headings, and dipped a little into the respective texts, and are only confirmed in the conviction that this is a magnificent work, a monument to the capability of the editor and his associates, altogether constituting an invaluable assembly of useful information for the reader. Stedman's Reference Handbook should have a place in every medical-man's library.

HILL AND ECKMAN: "TREATMENT OF DIABETES"

The Starvation-Treatment of Diabetes; With a Series of Graduated Diets Used at the Massachusetts General Hospital. By Lewis Webb Hill, M. D., and Rena S. Eckman. With an Introduction by Richard C. Cabot, M. D. Second edition. Boston: W. M. Leonard. 1916. Price \$1.00.

The starvation-treatment of diabetes, as advanced by Dr. Frederick M. Allen, of the Rockefeller Institute Hospital, undoubtedly constitutes a most valuable method of treating that malady. At the Massachusetts General Hospital, so the authors inform us, it has been carried out with great success—with so great success, in fact, that it was thought worth while to publish some of the diet lists fixed upon, as also the details of the treatment that have been adopted. Hence, this little book.

The authors point out that, in carrying out the Allen treatment, the physician must "think in terms of carbohydrate and protein": it is not enough simply to cut down the supply of starchy foods; he must know approximately how much carbohydrate and protein his patient is getting each day. Since it is not easy for the busy practitioner to figure out these dietary values, the series of calculated diet lists presented naturally will be of service to the practitioner. Various approved urinary tests for sugar, acetone, and the like, are included for the sake of ready reference. The food-table covers most of the foods ordinarily in use.

Some facts relative to the Allen method of treating diabetes were presented in this journal last month. Any physician desiring to familiarize himself with this most promising method of treatment should secure a copy of this inexpensive yet excellent manual, which gives the complete details necessary for best results.

CHAPIN AND PISEK: "DISEASES OF CHILDREN"

Diseases of Infants and Children. By Henry Dwight Chapin, A. M., M. D., and Godfrey Roger Pisek, M. D., Sc. D. Third Revised Edition. With 179 cuts and 12 colored plates. New York: William Wood & Co. 1915. Price \$3.25.

The first edition of this book appeared in 1909, and this is the third, attesting its popularity. From every standpoint it is one of the best books upon pediatrics offered to the profession. This is particularly true as regards dietetics. The directions concerning the feeding of children in this volume are exceedingly complete and of the utmost practicality. Doctor Chapin was one of the pioneers in the development of the new science of pediatric dietetics.

We are glad to observe, however, that the authors of this volume are firm believers in

the value of medicinal therapy. Chapter IX gives a considerable fund of very useful information concerning drug administration. The following paragraph is an illustration:

"Never prescribe a drug without a good and sufficient reason. Prescribe so that the dose will be small in amount and as agreeable as possible. Heavy syrupy mixtures may be agreeable, but are apt to give rise to fermentation from excess of sugar. Pills and capsules are not intended for children, who rarely can swallow them. Prescriptions should be simple and if possible contain but one or at most two drugs. Powders made up with sugar of milk are mixed with water and given from the teaspoon. Tablet triturates form an easy and accurate method of giving drugs. If the child is unwilling, the medication on the spoon is quickly slipped on to the tongue and the spoon held in position well back until swallowing takes place. In this way the child cannot regurgitate it. Begin with small doses in early life and increase if the desired effect is not obtained. Heroic doses, however, may be used in emergencies where rapid and active stimulation is required. Hypodermatic injection of the stimulant is often required to produce desired physiologic effects."

The volume has been largely rewritten and much new material added. The section on infant feeding has been recast, while in the chapters on Infectious Diseases, the Schick, luetin and mental tests have been described. New photographs have replaced many of the old ones.

COMSTOCK: "MOTHERCRAFT"

Mothercraft. By Sarah Comstock. New York: Hearst's International Library Company. Price \$1.00.

This book is an excellent one to put in the hands of the expectant mother, or, for that matter, any mother. It is a thoroughly scientific, and yet thoroughly readable exposition of the responsibilities of motherhood and how they are to be met. In its chapters we find discussions of the days before the stork, hygiene in the baby's wardrobe, feathering the nursery nest, feeding the new baby, care of the baby's feet, development of the child's mind, and other topics.

"Mothercraft" is really one of the best books of the kind we have ever seen, even if it is not written by a physician. Much of the material embodied in this book first appeared in *Good Housekeeping*. We can commend it.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6193.—"Convulsions with Opisphotonos." P. L. W., Ohio, has under treatment a young girl, sixteen years old (previous history is negative), who three months ago became subject to peculiar attacks. From time to time, this girl is taken with violent spasms, the head and heels alone touching the bed. These spells last about three or four and sometimes even as long as forty-five minutes and are attended by temporary unconsciousness. These attacks come on at about the same time each day, and afterward she feels well, but a little sore from muscular contractions. In general, the patient is strong and robust, while her menstruation seems to be normal."

Naturally, without a much clearer idea of basal pathological conditions, we are unable to comment (much less prescribe) intelligently. The seizures are undoubtedly of an epileptic character, but the opisphotonos in this connection is a very unusual symptom. For further elucidation, all the reflexes should be very carefully tested, and also the spine, external genitalia, and pelvic viscera carefully examined. Circumcision and dilatation of the cervical canal possibly may cause the whole train of symptoms to disappear promptly. The exact condition of the body-chemistry must be ascertained.

A reprint of this writer's article on the treatment of epilepsy has been mailed to you and may prove informative. After further study of the case, give us all the clinical data you can, and at the same time have a specimen of the patient's urine examined, when we hope to be in position to advise you effectively.

QUERY 6194.—"Dilatation of the Anal Sphincter. Chloasma." F. L. W., Oregon, asks: "(1) Is dilatation of the anal sphincter much done for constipation, and with what

success? What is the exact procedure, before and after treatment?

"2. What is the cause and the treatment of chloasmatic spots (or spots that simulate chloasma)? So far as I can determine, this patient is normal in every other way, except for having had two intentional abortions. She has no children.

"3. Vasectomy; what is the technic, preparation, and after-treatment? Also, can this be done in a way to sterilize and later release, if it is desired to do so?"

Dilatation of the sphincter ani can hardly be regarded as a remedy for constipation generally, but in certain cases, i. e., where retention of the feces in the rectal ampulla is due to constriction of the sphincter, dilatation will, of course, prove beneficial. Moreover, the entire nervous system is affected by this stretching; frequently thorough dilatation causes the disappearance of a long train of symptoms.

The procedure is extremely simple, and the use of instruments is, as a rule, undesirable. The patient should be anesthetized, preferably with chloride of ethyl or chloroform; but it is not necessary to produce profound narcosis.

The legs are elevated and the buttocks brought down to the end of the table; then the operator inserts his thumbs (one at a time), and dilates transversely (to right and left) until he feels the sphincters "giving" under the pull. Anteroposterior stretching is then done to a similar degree. The patient may be instructed to use, for a week or so thereafter, a rather large, hard-rubber rectal dilator. Where forced dilatation is refused, the hard-rubber dilator may be employed from the first, the patient increasing the size gradually. It should be inserted just before retiring and retained in place for five minutes.

We can best answer your question relative to chloasmatic patches by referring you to our answer to Query 5699, which appeared in this department in 1911, page 573. If you will give us a clearer idea of the underlying conditions, we may be able to extend still more definite information.

The operation of vasectomy is described in all modern works on surgery. It is hardly possible to discuss here the social side of the procedure, but we would refer you to some of the more recent articles which have appeared in the medical press, especially those appearing in recent issues of *The Critic* and *Guide*. We would suggest that you ask Dr. Wm. J. Robinson (the editor) to express his views on this point.

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QUERY 6195.—“Mitral Stenosis.” R. O., Maryland, has tried digipoten, also simple infusion of digitalis, in a case of mitral stenosis, but the result, as he feared, was too pronounced, and he had to stop the remedy, as even small doses excited the patient. He continues: “The heart-sounds are vigorous, not feeble, but the blowings at the mitral valve are plain, and there is no regurgitation—which seems odd, but perhaps the aortics hold the pressure. The pulse runs from 90 to 106, and with moderate doses of fluid extract of veratrum I can only bring it down to 80. The blood pressure I have not taken, but, so far as that may otherwise be judged, it is not high. The stenosis is the worry, and I had an idea that perhaps thiosinamin or the galvanic current might be of use. As to the urine: specific gravity, 1026; neutral or, at times, only slightly acid; otherwise negative; 36- to 38-ounce output. The patient weighs 144 pounds.

“The patient was presented at Johns Hopkins, where they verified my diagnosis as mitral stenosis, but held that the case showed myocardial insufficiency; wherein I differed, by holding the case as hyperefficiency, or overaction. Their prescription was, to give plain infusion of digitalis, but this created excessive throbbing and, so, we could not continue with it. The stenosis otherwise seemed not to create any concern to the professors.”

We believe that you will find cactus, in alternation with sparteine, most satisfactory. Cactus, as you are aware, exercises a distinct tonic action upon the heart-muscle and improves cardiac nutrition. Sparteine has been aptly called the “cardiac metronome.”

The action of both drugs is now so well known that we do not deem it necessary to

give more extensive data. In this connection, we would call your attention to the article on sparteine sulphate contributed by Doctor Pettey to *CLINICAL MEDICINE* for January, 1913.

Mitral stenosis is at best a difficult condition to treat, but, with sparteine and cactoid used to effect and arsenic iodide pushed in moderate dosage for some time, you may succeed in making some impression. Digitalis is generally contraindicated in mitral stenosis.

Elimination must, of course, be maintained, while the patient should also be carefully dieted. We should not give more than 1-64 grain of arsenic iodide after each meal, and at the end of two weeks should interrupt this for three or four days; then resume the drug for another period.

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QUERY 6196.—“Lymphosarcoma.” W. W. C., Texas, writing further relative to Query 6168, on “Osteoma,” in our February number, says: “A diagnosis of sarcoma has been made. The clavicle was removed about five months ago. Some three months later, another tumor (which is now as large as a large orange) appeared almost in the same site as the original one; this had not appeared at the time of my request for help. My ‘snapshot’ diagnosis was ‘tuberculosis or sarcoma’; but, after a few visits, the patient was induced by friends to try an Osteopath, who said there was a dislocated bone. After several fruitless efforts to reduce said ‘dislocation’ and inflicting much pain, he abandoned the job, saying he *could* reduce it, but, that, owing to her condition (eight months *enceinte*), it would not be well to push the treatment. After a lapse of some six or eight weeks, the baby having arrived, as well as a large tumor on the center of the clavicle, the patient deemed herself in condition to undergo the aforesaid ‘reduction of the displaced bone’ and returned to the Osteopath. However, when he saw the tumor, he refused to attempt further reduction.

This patient cannot hold out much longer. Some two months ago, I began using mixed-toxin treatment, but to no avail. I then began giving injections, sometimes into the tumor proper and sometimes elsewhere (alternating between the pectoral and gluteal region) of Calup’s toxin, emetine hydrochloride, and echinacea and nuclein, with 1-4 to 1-2 percent of quinine and urea hydrochloride. After injecting this combination into the tumor, the pain would cease for about five days. Suspecting the effect to be due to the

last-named drug, I left it out and found my suspicions correct. I again added it to the above mixture and secured the same results.

This was a great relief to my patient, as she then required only a little narcotic to quiet the nerves, whereas before I had been compelled to give her hypodermics night and day to control the pain. Just how long I will thus be able to control pain in the tumor I am at a loss to surmise. The baby is now about five or six months of age and appears robust. What do you think the probability is of the baby's inheriting the disease?"

This is probably a lymphosarcoma, and the end, of course, cannot be far off. There is little, if any, danger of the child being affected similarly; still, the exact nature of the growth should be definitely ascertained. From the rapid recurrence over the site of excision, it would seem that the diagnosis of sarcoma was correct.

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QUERY 6197.—“Typho-Bacterin and Typhoid Prophylactic Bacterins. Emetine in Typhoid Fever.” A. C. B., Oklahoma, has administered typhoid-prophylactic bacterins to six persons, and now asks what bad results or symptoms may be expected, if any. He infers that none are anticipated and seldom any occur. He further asks: “Does age make any particular difference as to likelihood of any bad symptoms following; and how should the dose be regulated according to age and weight of the individual?

“2. In what way is emetine most useful in the treatment of typhoid fever, if of any real value at all?”

“3. In using emetine for intestinal hemorrhage, what is the best and safest dose to give to an average adult? What dangers are to be guarded against? Intense nausea would be a somewhat undesirable condition in a very weak patient, whether there is hemorrhage or not.”

Practically no undesirable reaction occurs from the use of typhoid-prophylactic bacterin, save slight smarting pain about the point of injection and occasionally some malaise with slight rise of temperature.

Dosage: First dose, 500,000,000; second and third doses, 1,000,000,000 killed bacteria, each at 10-day intervals.

In times of epidemic, nurses, physicians, and others who are constantly exposed and those who travel, if under forty-five years of age and they have not had the disease, should be immunized by means of this treatment. Three doses generally suffice to confer immunity, which lasts about two years.

According to Major F. F. Russell, of the Medical Corps of the United States Army, the following directions give the best results: “The dose is given at 4 o’clock in the afternoon, then any reaction will occur during the night and will not inconvenience the patient. The immediate effect of the inoculation is a smarting pain, which passes off in a few minutes. Nothing further is noted until four or five hours afterward, when the subject may have a headache and feeling of malaise, while at the site of inoculation a red and tender area about the size of the palm of the hand may appear. The headache and other symptoms are rarely sufficient to interfere with sleep, and by the next morning all symptoms have usually disappeared. The men are cautioned not to drink [alcoholies] on the day the vaccine is administered, as alcohol seems to increase the severity of the symptoms, particularly the headache and the malaise.”

The initial dose of typho-bacterin is 50 million to 200 million killed bacteria, administered to combat developed typhoid fever. Following the injection of this dose, the temperature of the patient usually rises from 1 to 1 1-2 degrees Fahrenheit within twelve to eighteen hours, thereafter falling, and remaining low for two or three days, after which it again begins to rise. If now a second injection be given, the same sequence of symptoms follows, but after the third or fourth injection the temperature may fall to normal.

Following this treatment, the typhoid-patient feels and looks better, fresher, more robust. The anxious appearance is lost and he sleeps. Relapses and complications are lessened.

This treatment is practically harmless, does not interfere with the use of other remedial measures, and is, perhaps, the most effective of all of them.

As you are aware, Frazier recently reported 82 cases of typhoid fever cut short in from three to six days by the hypodermic injection of emetine hydrochloride, 1-2 grain repeated every twelve hours.

Doctor Brown, of New Tazewell, Tennessee, in a recent communication confirms Doctor Frazier’s testimony, saying: “Everything Doctor Frazier states is true, and more. I have treated typhoid fever, dysentery, and measles with ipecac for many years; emetine gives even better results. In any case, where the secretions need stimulation, it is the remedy of choice.” A letter from Doctor Frazier appears in this number of CLINICAL MEDICINE. See page 442.

Nausca rarely follows the administration of 1-2 grain of emetine at one dose. We are quite sure we need not point out the desirability of using the sterile solution available in ampules, in preference to an extemporaneously prepared solution of the drug.

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QUERY 6198.—“Picric-Acid Dressings for Burns.” J. C. B., Kentucky, asks for a prescription for picric acid for burns.

Picric acid solution is extensively used in the treatment of burns and scalds. After the injured surface is cleansed, the blebs are opened and drained, then strips of sterilized lint or gauze soaked in the solution are applied.

The solution ordinarily employed is as follows: picric acid, 75 grains; alcohol, 2 1-2 ounces; soft water, to make 32 ounces. The dressing soon dries and may be left in place for several days before it is removed, then is renewed in the same manner. This writer, however, prefers to keep the dressing moist for the first forty-eight hours.

Some clinicians recommend a 1-percent solution and call attention to the fact that stronger solutions should not be applied over very large surfaces, for fear of absorption and consequent poisoning.

We are convinced of the desirability of combining picric acid with citric acid, and recommend the use of a solution of the following proportions: Picric acid, 10 parts; citric acid, 15 parts; distilled water, 7 parts. This proves sufficiently antiseptic and possesses the power of coagulating albumen, thus affording protection. Such a solution may be applied freely with a swab, care being taken to medicate the edges of blistered areas. The lesion should then be covered with one or two thicknesses of gauze wrung out of the solution and bandaged snugly.

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QUERY 6199.—“The Gibson Ratio.” G. B. W., Minnesota, asks: “What do you think of the value of the ‘Gibson ratio’ between the pulse rate and the blood pressure in the treatment of pneumonia? In most of my asthenic cases, I have found the blood pressure to be below the pulse rate, and I had all I could do to raise it without using aconitine or veratrine. Just now I have had a bad case.

“The patient, a woman, started in with a temperature of 102 degrees and a pulse of 120. Her temperature soon dropped to 99.8° F., never registering higher than 101 degrees; while her pulse ranged between 100 and 120, and the blood pressure between 90 and 100—

always below the pulse. The pulse pressure dropped to 20 or less. There was consolidation over both lungs extending almost to spine of the scapula. The temperature came down by lysis on about the tenth day, but the lungs did not entirely clear up for several weeks; in fact, she was not able to sit up in a chair for two weeks after the temperature had returned to normal. I gave her caffeine and digitalin, in an attempt to keep her pulse rate and blood pressure somewhere near together. The digitalin seemed to have the best effect.”

We regret to state that personally we are not sufficiently familiar with Gibson’s theory to enable us to venture an opinion as to its real value in general practice.

As we understand it, the Gibson ratio represents the relation between a decreasing blood pressure and increasing pulse rate occurring in the progress of an attack of pneumonia. When on the chart tracing there runs an open space between the curves of the blood pressure and of the pulse frequency, the patient is comparatively safe; when, however, the two curve-lines cross, that is, if the pulse rate rises higher than the blood pressure expressed in terms of millimeters, then danger threatens.

This theory has been criticized. Thus, for instance, Reilly, in the *J. A. M. A.* for January 15, 1916, asserts that the rule is not always a safe one to rely upon, being of more value in young, strong adults than in children or the aged. As a matter of fact, in asthenic cases, aconitine and veratrine may be given, provided they are associated (as in the dosimetric trinity) with strychnine and digitalin. In many cases, cactus will meet the requirements perfectly. Usually in the aged and in very small children the blood pressure is low and the pulse likely to be rapid. If you have not read Reilly’s article, we suggest that you do so.

Do not forget the extreme value of camphor (hypodermically) in these cases. The woman to whom you refer would probably have responded promptly to this agent.

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QUERY 6200.—“Inoperable Cancer of Face.” J. T. C., Mississippi, has under his care an old lady with “an open cancer covering the whole side of her face from her ear to her eye. The deeper muscles of the face are exposed and very sensitive; the eyeball is intact, but exposed. She can not bear the light, so, stays in a darkened room. The pain is constant and so severe that she has slept hardly any for several days and nights.

It is relief from pain and sleep that she begs for. Ordinary opiates have failed her of late. What can be done for her?"

You are confronted by a very difficult problem. This writer would be inclined to use hyoscine and morphine hypodermically, once daily, and some modified combination of them internally, to maintain the effect between injections. In cases like this one, it is the physician's duty to minimize suffering.

For local application we would suggest orthoform, after first thoroughly cleansing the affected area with a solution of peroxide of hydrogen, diluted with 2 parts of boiled or distilled water. Furthermore, in some of these cases, a mixture of thuja and echinacea—equal parts of the fluid extracts—applied on compresses affords relief; then, again, fails utterly. The best results are usually secured from the use of orthoform, applied in the form of ointment or the dry powder. A local anesthetic might be painted about the periphery of the lesion morning and night.

Under the circumstances, we should not hesitate to give the indicated anodyne "to effect." There is no possibility of the woman's recovery, and she is distinctly entitled to surcease from that constant and irremedial agony.

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QUERY 6201.—"Local Use of Iodized Calcium. Monsel's Solution." U. S. M., Oklahoma, writes: "Some five, six or seven years ago, I read in *The Boston Journal of Chemistry*, about Nichols' brown iodide of lime. Becoming interested, I ordered an ounce of it, and employed it in my cases of tonsillitis, goiter, adenitis, and other conditions. There being no suggestion as to manner of using it, I made a paste with glycerin, applied it with a soft brush or a swab. I met with unusual success. I now should like to know whether iodized calcium has been or can be so used."

"Another thing: Just now I am puzzling over a personal matter, an instance of forgetfulness. Some years ago, a man was brought to me in a state of collapse, owing to hemorrhage from a pile tumor, of a week's duration, and he really looked like a corpse. He was placed on the table, and the sphincter was greatly dilated, the source of bleeding discovered, and then a dilute styptic fluid (iron in some form) injected. The bloody discharge was checked instantly, and recovery followed. However, for the life of me, I cannot recall what particular solution of iron it was. It does not seem to have been the ordinary tincture of ferric chloride."

We note with particular interest your use of a paste of glycerin and "brown iodide" in some forms of tonsillitis. This writer has thus applied calx iodata in very many cases; in fact, has filled the crypts with it, and has secured excellent results. Hence, you will do well hereafter to employ this preparation just as you did the older preparation. Read Lawrence's sketch printed in this journal, December 1914, page 1031.

The preparation of iron you are thinking of is probably Monsel's (styptic) solution, the official liquor ferri subsulphatis, a dark red dish-brown liquid readily miscible with water. It is just possible, however, that you utilized a diluted solution of ferric chloride—liquor ferri chloridi, U. S. P. Either of these solutions possesses strongly astringent and hemostatic properties, although the sulphate (Monsel's) is universally given preference, as rather milder, because less acid.

We may add, however, doctor, that it would be a little dangerous to inject iron solutions *into* rectal tissue. (We judge that you gave it simply as an enema.) Do not forget that embolism may follow this procedure. No such untoward result is to be feared, however, if the hemorrhoids are injected with phenol.

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QUERY 6202.—"Infantile Syphilis." H. B. W., Iowa, desires to know "the best treatment for syphilis in an infant."

You will find this subject thoroughly covered in Browning and McKenzie's "Recent Methods and Diagnosis of Syphilis," and Fournier's treatise on the same topic.

Holt also covers the subject very thoroughly in "Diseases of Infancy and Childhood," and points out that the treatment should be instituted as soon as the first positive symptoms of the disease appear or even, under certain circumstances, say when both parents have recently suffered from active symptoms, before symptoms are evident. It is also well to institute antisyphilitic treatment when previous children died soon after birth, such anticipatory treatment to be continued for six weeks; if by that time no further symptoms appear, treatment may be discontinued.

Mercury is as much a specific for hereditary as for acquired syphilis, and perhaps the best way of introducing it into the system is by inunction; ordinarily 8 to 10 grains of mercurial ointment, reduced with an equal quantity of vaseline, is rubbed into the palms, soles, axillæ or inner surface of the thighs

daily. The place of inunction should be changed constantly.

The writer gives gray powder, 1-2 grain, internally, three or four times a day. Holt recommends mercury bichloride, gr. 1-60, well diluted. Should the symptoms be urgent, calomel may be substituted, gr. 1-10, four times a day. Calx iodata is preferable to potassium iodide in tertiary syphilis. Salvarsan has been found as efficacious in infants as in older patients, but this preparation must, of course, be given by an expert syphilitologist. Recently, sodium cacodylate has been extensively used to replace Ehrlich's preparation, and it is declared that it gives equally good results, while it is much less toxic. See the editorial and Neiman's article anent this arsenical preparation, published elsewhere in this issue.

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QUERY 6203.—“Dementia Praecox? Quien Sabe?” J. W. M., Missouri, has under observation two girls seemingly healthy all their lives. One began to menstruate at fifteen. There was no pain, no excess, indeed, so far as menstruation was concerned everything appeared to be perfectly normal, but she developed at each period a certain degree of forgetfulness, and seemed to be off a little in her mentality. However, she married at eighteen and the trouble disappeared. She is now about twenty-nine years old and has several children.

Her sister, younger than herself, matured at fourteen. She promptly began to develop the same characteristics, and each period they became more pronounced. Now she is twenty years old, and is undoubtedly insane. She does not seem to be “sick” in any other way. “What is the cause?” the Doctor inquires. “Was it a sexual starvation that caused the latter's trouble and sexual gratification that cured the former girl? Give me your opinion.”

We have given the problem you present very careful consideration but are unable to offer a definite answer. The fact that both these girls suffered from reflex mental disturbance at the menstrual periods, would show some systemic taint. Of such are the epileptics, and, under certain circumstances, from just such material come the victims of dementia praecox. Very likely your second patient is a victim of this form of insanity.

It is absolutely impossible to state that marriage would have controlled the conditions which now obtain in the younger patient. On the other hand, the bearing of children may and probably does exert an immense influence

upon just this type of patient, and the fact that the now normal elder sister has borne several children is corroborative evidence of the beneficence of reproduction. Sexual starvation (or excess), in our opinion, could not alone produce or remove the systemic toxemia, which could be eliminated, or cease to exist, in the child-bearing woman.

As the girl has gone to the asylum, it is impossible, of course, for you to make a thorough physical examination. But here, as elsewhere, it would be well not only to operate upon a hooded clitoris but to dilate the cervix, correct any malposition of the uterus and thoroughly dilate the sphincter ani. In more than one case incision of an abnormal hymen has proved curative of some of these psychoses, and in not a few instances thorough pelvic depletion and brisk purgation, together with the administration of nuclein, has restored such a patient to health. We wish an Abderhalden test might be made in your second case, which probably (as we have suggested) is one of dementia praecox.

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QUERY 6204.—“Chronic Diarrhea.” W. E. G., Mississippi, is treating a woman 57 years old who has had a persistent diarrhea for several years. “I have,” he says, “tried everything except emetine. Would you advise its administration?”

It is of course difficult for us to prescribe intelligently for chronic diarrhea in a patient approaching sixty years of age without having a much clearer idea of basal pathological conditions. In practically all amebic infections of the bowel, emetine injections prove effective. In this connection, we would call your attention to the article on the use of emetine in amebic dysentery which appeared in the August, 1913, issue of CLINICAL MEDICINE; see also interesting papers on the physiological action of emetine in the February and March, 1915, numbers.

If you will give us a clearer clinical picture, and submit to a competent laboratory-man a specimen of feces, preferably with four ounces of urine from the twenty-four-hour output, total quantity voided being stated, giving us his report, we shall be in a position to aid you intelligently.

For the present you might administer every second day a high enema of a solution of the sulphocarbolates, 50 grains to the pint. Internally give zinc sulphocarbolate, grs. 2; hydрастoid, gr. 1-6; brucine, gr. 1-32, every four hours and some good digestive after each meal. The patient must of course be dieted carefully.

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Dependable Therapeutic Fact for Daily Use

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The Shrinking Dollar

THEORETICALLY, people in the United States are rolling in wealth these days. Practically, the doctors of the country are not any more prosperous than they were last year or five or ten years ago. The reason—the dollar is shrinking. As Dr. Thomas F. Reilly points out in a recent number of *The Medical Record*, the cost of living has advanced fifty percent within the last two decades. Everything has gone up, except the physician's income—that remains stationary. As a matter of fact, 118 years ago, the Medical Society of the State of New York drafted a table of fees, and these were almost as high as doctors are now getting for the same services, while in some localities they actually were higher; and yet, the dollar at that time had a purchasing power nearly three times as great as it has today.

Measuring the earnings of the physician of the present day with those of organized skilled labor, Doctor Reilly says that we do not make a very good showing. The bricklayer, the carpenter, the painter, and numerous other laborers earn more per hour, as well as more per year, than do many of our physicians. Indeed, as that writer shows, the average earnings of the bricklayer are con-

siderably higher than the average income of the physician, while economically the former is immensely better situated.

"To compare the economic relations between the money invested in a medical career, the time and effort spent in study and preparation, and the lean years with that of the bricklayer would seem at first sight to be a joke," comments Doctor Reilly. If we take into consideration also "the cost of the physician's occupation," his clothing and that of his wife and children, the cost of his office and his equipment, his medicines, his societies, his vehicles—all these things amounting to at least \$1000 per year more than his bricklayer neighbor must have—we find the doctor's dilemma still more serious.

Well, what are we going to do about it? Doctor Reilly has a number of remedies. There are various ways, he declares, in which we can raise our income without violating the ethical code. For instance—

1. The first thing is, "the successful merging of business methods into professional practice"; in other words, put your practice on a business basis. That means better bookkeeping, better collecting, no cutting of fees and charges, and firmness in dealing with deadbeats.

2. Next, raise your fees; and the only successful way of bringing this about generally, Doctor Reilly is convinced, is, for each county society to adopt a fee-table. The ideal method would be, to raise the fees as a whole, so as to approximate a living-wage, just as the trade unions do; the living-wage to be determined through a collective investigation.

3. The fees can be so adjusted that special remuneration may be exacted for special and unusual services. For instance, there should be an extra charge for the first consultation, at which occasion much time is taken up by the exhaustive physical examination necessary for best work. Also there should be special charges for examinations of the blood, urine, sputum, feces, and other secretions.

4. At subsequent office-visits, the physician should make it a routine practice either to make a partial examination with instruments of precision, such as the sphygmomanometer, stethoscope, and the like, or else some special treatment should be instituted. Simply to tell the patient to keep right on doing what he has been doing does not seem to the latter sufficient justification for a reasonable fee. He must feel that he is getting his money's worth. If you actually give him a *quid* for his *quo*, by adding to your knowledge of his case every time he calls, he will pay you more willingly.

5. As to special measures, it is often desirable and helpful to employ some kind of mechanical apparatus for the treatment of the nose, throat, chest or other portion of the body. There is scarcely a disease or complaint that may not be treated by such means. Electrical, x-ray, hot-air, and other appliances have become a necessity. Not only will the patient be benefited if the treatment is given with skill and understanding, but it often brings him back to the office—which is not the case when only a “slip of paper,” a prescription, is handed out to him.

6. The physician should charge for the minor professional services, such as writing death-certificates or certificates of health, also for giving advice over the telephone. It is rare, indeed, that any patient will object to a reasonable charge for a service of this kind.

7. Another way of making the patient feel that he is getting more for his money, says Doctor Reilly, is, to supply him with medicine. “Office practice,” Doctor Reilly, sets forth, “is cultivated by this means in

places where the fees at the office and at the house are the same. The patient feels that it is worth the extra trouble to go to the office by saving the cost of at least some of the medicines. In these days of war, this has come to be a very important factor. Nowadays, the average prescription costs as much as the office-fee. While I do not advocate general dispensing, still, the use of a few staples, in conjunction with the prescription, will undoubtedly add to the ease of securing the extra fee in the office.”

These are some of the suggestions offered by Doctor Reilly by which the thoughtful doctor can prevail upon the shrinking dollar to come out of hiding. If you analyze his argument, it all resolves itself into this: The doctor who wishes to increase his income must do better and hence more valuable work. The modern business firm constantly talks *service* to its salesmen. The retailer who gets the highest prices for his goods is the one who takes the greatest pains to be of help to his customers, who extends to them greater courtesy and shows them how to make the things they buy of the greatest possible benefit. Milady buys her dress-goods from the clerk who can tell her about the matching of colors, choice of trimmings, and will offer her practical suggestions as to how to make up the gown so that it will be most attractive.

The advertising man not only sells to his customers space in his magazine, but *he sells them service* as well. He helps the advertiser prepare his copy, explains to him how best he can follow up his advertising through circular-letters or by personal appeal. The manufacturer, likewise, imparts to his customers the maximum of information relative to his wares, so that they may be used intelligently. If his is an up-to-date concern, it has a complete service department for their comfort and convenience. This department is a bureau of information for all kinds of knowledge, and it keeps people constantly in touch with, and interested in, “the house.” The doctor must learn something of this service idea. In the past, his work has been too slipshod. He has been altogether too content to let patients drift into his office, and has made little effort to prevent them from drifting out and away forever.

He must make the office itself more attractive, especially to the women folk; it should be distinctive of his profession, equipped for handling any emergency.

He must make his examinations more thorough, not only because people appreciate

the value of thoroughness, but also because it enables him to diagnose more accurately and thus treat his patients more successfully.

He should know more about the various methods of treating disease and be prepared to employ all physical and medical agencies likely to prove of value.

Every medicinal need of the patient that the doctor can properly supply, he should supply. Every physician should carry a small stock of commonly used remedies, even if he ordinarily prescribes.

He should establish his position as an authority in all things pertaining to health, and put his knowledge at the service of the community.

Finally, he should impress upon his patients the fact that he knows these things, so that they, in turn, can appreciate their importance as measured in dollars and cents.

The great underlying secret of how to increase the doctor's income is, after all, answered in a single word—*thoroughness*. The doctor who will take the time and trouble and energy sufficient to study this income problem from every possible angle and then put into application what he has learned, keeping the service idea in the front of his head, will have very little reason to find fault—provided he has the requisite knowledge and ability, as the majority have.

The man who is trying to do
The best that he may is never
Beset, when the day is through,
By any troublesome doubt whatever;
He is never inclined to sigh
For the follies that are denied him
Nor at night does he fearfully eye
A phantom that hurries beside him.
—S. E. Kiser

THE PHYSICIAN AND THE MICROSCOPE

We can hardly conceive how, in these days, a practitioner of medicine can manage to get along without a microscope. We are not and, as our readers well know, never have been sticklers for all the paraphernalia and technic of the laboratory in the general practice of medicine. We do not believe it is necessary for the doctor to possess all the apparatus and appointments of the medical and biological and chemical and pathological departments of a great university, in order to be a successful practitioner of medicine. We do not even believe it is essential for him to have a working-knowledge of all these branches of medical science. And, if this be heresy, make the most of it. For most of this, he can rely upon the laboratory

expert. But, in the present state of medical knowledge and with our present views of infectious diseases, it is hard to conceive how diagnosis can be adequately performed, even by the general practitioner, without a microscope.

The usefulness of this instrument by no means is confined to rare and obscure diseases. There is hardly an infectious condition with which the doctor may come in contact but owes its positive diagnosis to the microscope, and almost all the metabolic diseases may have invaluable light shed upon them through the glass of an objective. To make mention of no others, surely the recognition and positive detection of such old friends (or enemies, rather) as tuberculosis and diphtheria are of themselves sufficient to warrant the expense and, if need be, the sacrifice of equipping oneself with a microscope. And it may be safely asserted that he who once possesses himself of one of these useful instruments will speedily find the range of its usefulness increasing with every day and week and month and year.

It is usually accepted as a necessary premise that the country practitioner is more or less exempt from the necessity of equipping himself with such ultrascientific armamentaria. Nothing, however, is further from the truth. If anyone is justified in leaving such things out of his equipment, it is the city man, who lives in the midst of a hundred facilities for having this work done for him by specially established laboratories or by the hospitals with which he may be affiliated. The country practitioner, on the other hand, has no such facilities at hand. Either he must do his own microscopic work or it will largely go undone. And, while, as we have intimated, there is doubtless a great deal of ultrarefinement of laboratory work which is not really essential to the general practitioner, the microscope has unquestionably aligned itself, in these days, with the thermometer and the stethoscope as a necessity of practice, rather than as a luxury of technical science.

There is really no economic reason why any practitioner should not avail himself, nowadays, of the service of a microscope. To be sure, to the rural practitioner, its purchase usually means something of a financial effort; but a good microscope does not cost nearly as much today as it used to, and it can be bought upon very easy terms—some of our own advertisers are making very generous offers in this respect. And, we repeat, the sacrifice (if it does entail a sacri-

fice) will be amply repaid by the wonderful addition it will make to the doctor's diagnostic, and therefore to his therapeutic efficiency.

For heathen heart that puts her trust
In reeking tube and iron shard—
All valiant dust that builds on dust,
And guarding, calls not thee to guard.
For frantic boasts and foolish word,
Thy mercy on Thy people, Lord!

—Rudyard Kipling.

A GREAT CRIME: PERMITTING MURDER OF THE WHOLE RACE

There be those among us who by constitution are "mugwumps"—in that their kind are unable to coerce themselves into the role of partisans, but perforce must give to each side of a question its due consideration. This judicial frame of mind carries with it certain disadvantages, for it pleases nobody; rather, it generally causes both sides to a controversy to rank such a judge among their enemies.

Looking as dispassionately as our nature permits upon the ways and quicernesses of our fellow men, we must say that, while certainly there is a progress perceptible, the onward movement partakes, as to celerity, of the glacial period. An impulse is communicated to the current of human thought, then, after a period of agitation, there is a heavy surge forward. But this comes after the original agitators have been buried in the debris loosened by their own dynamiting.

The forces most effective in restraining progress are: inertia, ignorance, superstition. Take for illustration the latter factor: In the Gospel we read that Jesus, on one occasion, remarked that the Sabbath was made for man; not man for the Sabbath. This great principle might be applied by the many excellent folks who make of the Bible a fetish, instead of busying themselves learning from its pages how to conduct their lives to the ends inculcated so clearly by its precepts. But, no, these ilk will insist upon making of the great Book an authority upon anything and everything—following the line of that eruditè editor who said: "If you are deficient in anything, read the Bible."

The idea that the Bible is an inspired work on cosmogony, was demolished by the voyages of Columbus; still, after more than four centuries gone by, the body of the Christian world has not yet realized this truth. That the scriptures are not a miraculously endowed authority on sanitary science, might be suspected from the tremendous

importance paid to prophylaxis against that scarcely infectious malady leprosy, while altogether ignoring tuberculosis. To this disposition to worship the Book instead of the Deity we may attribute the senseless antipathy against snakes that leads people to destroy not alone the deadly species, but also those harmless ones that are so valuable as exterminators of bugs and mice and other noxious pests of the soil. Also—and this is the true *onus* of this diatribe—we blame this irrational sentiment for the prevalent prejudice against measures designed to prevent the spread of venereal disease, by reason of those people looking upon this as strictly a moral question and outside the pale of social legislation.

Here are some thoughts concerning this group of maladies, as expressed in a paper in *Public Health* by Arthur F. Fischer:

Recent investigations show that a degenerative influence has paved the way for many modern diseases, until it has become a real menace. This we have definitely determined to be the venereal diseases.

These cause the deaths of 250,000 people directly and indirectly each year. They cost the lives of 500,000 prostitutes every six years.

One-eighth of all human disease and suffering is due to these.

Sixty percent of all males are at some time in their lives diseased with them. Sixty percent of the inmates of our insane-asylums are there because of them.

Full eighty percent of children born with sight, but blind within a few days, owe their misfortune to this curse. From 20 to 25 percent of the inmates of the blind-asylums are there because of gonorrhea.

Gonorrhæal infection of innocent children is becoming serious; some cities showing 800 to 1000 such infections each year.

Gonorrhæa causes 60 percent of unwillingly sterile marriages. It may cause foot abscesses, valvular heart troubles, joint diseases, and many others.

Approximately 80 out of every 100 women who die of diseases of the reproductive organs have been infected innocently.

That 25 percent of syphilis is acquired innocently, that baby blindness has implicated gonorrhæa, besides laying the foundation for local tuberculosis, cancer, and ectopic gestation, brings us to face the situation.

General syphilization has lowered resistance to many diseases.

Feeble-mindedness, degeneracy, and insanity often result directly from syphilis. It

is the greatest factor in the death of prematurely born children, the frequent basis of miscarriage.

It is a common cause of general paresis, locomotor ataxia, brain abscess, and nerve degeneration. It indirectly causes one-half of all cases of tuberculosis.

The remedy proposed is: education, co-operation, regulation, a correct estimate of the ravages of the disease, segregation, and effective treatment.

Every word of this terrible presentment is true. Even so, not half, not a fourth is told. But the remedy proposed is the merest twaddle. You may talk till the cows come home; you may preach; you may legislate; yes, Dame Partington with her broom had a better chance against the Atlantic Ocean than you will have of controlling this social evil with your measures.

Let us face the truth honestly. There has never been a people, race, government, climate, latitude, law or religion that has succeeded in preventing illicit sexual intercourse; and, granting that 25 percent of venereal disease is incurred innocently (and we believe this is far short of the truth), it all comes back finally to illicit sexual intercourse as the ultimate cause of this group of diseases.

Every effort to stamp out these maladies, whether by registration of public women, by segregation or by lock hospitals, has ignominiously failed, just as the religious teachers have failed merely by preaching morality.

There remains the one obvious method, as yet untried in the civil community, although in the naval and military it has succeeded better than any other, namely, the direct prevention of infection by means of germicide agents used locally immediately after exposure to infection.

When the need is so great, so evident, why, in the name of the human race, has this obvious method been passed by without being accorded due attention?

Some years ago, the head of a great chemical manufacturing firm consulted the present writer about taking up the manufacture and distribution of this venereal prophylactic—the same that was being used in the Army. The value to the country was beyond computation; the remedy was effective, the profits were large enough to warrant the commercial venture. The writer's advice was against the enterprise. The reason—that all over the country there would arise the cry that the thing was an encouragement of immorality, and, untrue as this was, it would give the firm such an undesirable

reputation as would seriously prejudice its general interests. The idea was dropped.

The situation is startlingly serious, and is growing more appalling every year. Let those who object to this rational method of meeting this crying need devise other ones, and let them have opportunities to put them in operation. If after the fullest trials their remedies have proved ineffective, then, for the sake of humanity, they should withdraw their objections to the one cure proposed and permit its adoption.

Meanwhile, with the greatest reverence for the sacred books of the ancient Hebrews, as exponents of a system of morality which the world has pronounced the best ever placed in the hands of man, we may be allowed to quote the words found in the "Bigelow Papers":

"John P.

Robinson, he

Says they didn't know everything down in
Judee."

An old maid is any livin' thing, male or female, human or horse, cat, pig, or chicken, that's so finicky, so p'ticular about some one little thing that don't really amount to much, that he don't pay no attention to some of the really important things of life.—Stephen Conrad.

FOREBODINGS: THE CURE

There is one condition against which the utmost art of the physician fails, and that is, a settled conviction on the part of one's patient and the household that the former will not get well. No matter how powerful the will, how highly developed the intellect, no man born of woman can resist such an influence.

A very distinguished physician, a gifted *raconteur*, a man entirely free from the old-time superstitions that restrict the intellectual flight and clip the wings of reason believed that he would die at about a certain time. Why? Because the men of his family before him had died at that particular time of life. He did die at that age.

A ship-builder determined to dissipate the "Friday" superstition (a thing that dates at least as far back as Babylon, ages before Abraham); so, he laid the keel of a vessel on a Friday, launched it on a Friday, and sent it to sea on a Friday, under the command of a captain named Friday. The vessel never was heard of after its departure. Very likely the crew, disturbed in mind over the matter, fell into a panic at some critical moment and lost the ship, when alert boldness might have saved it, and them.

Well you recollect that, when the Kentuckian was told about whisky interfering with his business, he gave up the business. In the same way, when the patient's entourage is convinced that he is going to die, make him change the environment. Change it radically, completely. Send the patient off on an extended automobile trip, leaving the croakers at home. Let nobody accompany him except someone who doesn't believe that he is ill, but tells him it's all imagination. Take elaborate pains to do all possible for this sick man, but do not tell him so. Belittle his complaints, but attend to them. Give him many frequent doses of hopefulness, as the principium, plenty of good laughs as the adjuvans, a little ridicule as the corrugans, and a life in the open as the menstruum: and there is your official, four-pronged prescription—and appetite, digestion, somnos, sthenia, will follow.

Suppose he dies? Well—think you are the Almighty, do you? Doesn't every human being die eventually? And would you not rather die fighting than lie down and have your gullet cut like a sheep? Our own ideal is the Cumberland, which sank under the attack of the Merrimac, but left her flag still waving over her watery grave.

The greatest and most interesting of all studies is man himself. Astronomy appeals to the imagination; botany, to the love of beauty in floral nature; geology, to the desire to know how the earth was prepared for habitation. But the study of man appeals to every mental and physical quality with which he is endowed. He is still the unsolved riddle of the ages.—Sullering.

THE MORNING REFRESHER

Snatched from business and rest, called away to save a valued friend from impending death, the question tortures my mind: What dread destroyer casts over his bed of sickness the shadow of doom? Is it pellagra, variola, cholera, swift tuberculosis, scalpel-defiant pneumonia? No, none of these, none of the storied plagues or the modern pests. It's impaction; just a huge fecal impaction. The patient, luxuriating in the convalescence from a long and baffling malady, has forgotten that the alimentary canal is also a sewer, and that the channel must be kept open in order to fulfil its function properly; and, so, he proceeded to eat and drink, and was merry, without taking thought for the matutinal intestinal flushing.

Students of Burggraeve begin by observing curiously the insistence by the wise old Belgian upon the preliminary cleansing of the bowels. As he reviews each malady n

turn and drifts into prophylaxis, one feels inclined to smile over the old surgeon's hobby—for every ailment, he starts out with the stereotyped, "Empty the bowels"; and, in descanting upon the means of keeping well, he likewise "refreshes the bowels" with the morning laxative. If you are sick, take salines; if well, take salines.

That distinguished medical authority, Mark Twain, said that, were he to open a dispensary, he would stock up with a barrel of salts, and let 'er go.

The keynote of our own therapeutic system lies in the familiar maxim: "Clean out, clean up, and keep clean."

By this time, one begins to sit up and take notice. He reflects on the instant popularity of Haig, with his urge of elimination; of Bouchard, with his demonstration of the evils due to each toxin retained in the system; of Lane, and his energetic attacks upon the mechanical causes of fecal retention. Then perhaps the recollection of some personal experience rises like the flavor of last night's rarebit—some case where one blundered along uselessly until a profuse offensive alvine discharge made clear the diagnosis, and accomplished the cure.

Just as soon as the doctor's curiosity is aroused, his own cure is established. It is very easy to recognize the existence of fecal toxemia and to appreciate the effect of this pathologic factor upon any disease-process, any disordered function. And just so soon as the internal elimination measure is established in the doctor's routine, his success in practice increases and his cases begin to become simpler and more mild. Malignancy is rooted in poor hygiene, internal and environmental.

I think that Nature, that primeval deity antedating grouchy old Saturn, intended her human offspring to begin each day with a long draught from the babbling spring. Possibly she had an object in dissolving in it a pinch of mineral salts, for even the most simple autochthonic prized their saline springs. It may be because we have wandered far from nature's pristine paths that the pinch of salts has to be a little larger, but, certainly, modern man is the better for the matutinal saline draught.

We have our individual preferences, founded, perhaps, on the fact that, while the Lord made man in His own image, He did not make any two men exactly alike. Each selects what best suits him and his conditions. I have partaken of a small spoonful of one saline laxative each morning

for twenty years, without having had to increase the dose. This suits me, because it acts once, and no more, an hour after being taken. Other forms continue to act during the day, which is inconvenient in a city not provided with public comfort stations. Many a man is driven to drink by the necessity of patronizing saloons to meet these demands of our delicate nature.

If there is any ill chargeable to this saline habit, it as yet is imperceptible and surely a long time coming. Meanwhile, the refreshing of the bodily and mental faculties, the alertness, the joyousness of living seem to be well worth that problematical evil consequence that constipated croakers apprehend.

"BUBBLE" AND "SQUEAK": A SIMPLE STORY WITH A MORAL

Among the interesting comments upon Morley's able summary of the pros and cons of the injection-treatment of hemorrhoids, originally published in the London *Lancet* and reprinted in last month's CLINICAL MEDICINE, is that contributed by Dr. Ivor Back, himself a distinguished authority on rectal diseases. In this article, he tells a little story that is so *a propos*—so pat, has so many applications, that we reproduce it here for the enlightenment of the members of our own numerous "family."

"There was once upon a time," so the tale runs, "a king in Erewhon, who, like so many a rich layman since his day, thought to ensure his bodily health by having a variety of medical advice. So, he attached to his court two alchemists (or, as some call them, physicians). Their names were Bubble and Squeak, and there was great rivalry between them.

"Now, in the course of his researches, Bubble had discovered an herb with which he claimed he could cure the fundamental ailments of the human body. (Bubble was the first proctologist in history.) Squeak said that Bubble was a quack, also that the herb was not only useless, but also dangerous.

"One day the king's wife became conscious of a small pile. She consulted Bubble, and he cured her. So, the king, who was a just king, cut off Squeak's head, because he was a liar. Some time later, the king himself also became afflicted with a pile; but his was a large and troublesome one, which pro-lapsed, and was irreducible, whenever he became excited—as kings are prone to become. Then he, too, tried Bubble's remedy. But this time the wonder-herb failed. So, the

king, who—as we have seen—was a just king, cut off Bubble's head also, because he, too, was a liar.

"The herb—though, for aught we know, it had its uses—fell into disrepute, and this was the result of the exaggeration of the enthusiast, on the one hand, and of the bigotry of the skeptic, on the other."

In this day of the irresistible and irresponsible smashing of idols, it is well to remember that the old methods are not yet all dead. But—there are many remedies that were widely used and highly praised by our fathers and grandfathers in the healing art which are too rapidly passing into disrepute and oblivion. Many of these were good once, and are good now, but, because we do not understand how they act, because the new pharmacology proclaims that they do not act—can not act—we are turning our backs upon them, ready to forget the strong testimony in their favor submitted by men who were but little less wise than we are. In these days, we should be studying our drugs from new angles, as a matter of course, but we also should relearn the lesson of conservatism.

The doctor assuredly is king, but, let him be a just king.

The riches of our Commonwealth
Are free strong minds, and hearts of health;
And more to her than gold or grain,
The cunning hand and cultured brain.

John G. Whittier

WHAT CHEMISTRY MEANS TO THE NATION

We are printing in this issue an article written by an anonymous author, who signs himself "An American Chemist," and entitled "The Arts of Peace." It appeared in the April 8 number of *The Lancet-Clinic*.

It is but very seldom that we reproduce in CLINICAL MEDICINE an article that already has been published in another journal; however, we do not hesitate to deviate from our practice in this instance, because we believe the article to be of vital interest to every good American.

Be sure to read that article. The author shows, in a way which we believe must bring conviction to every reader, the importance of the chemical industry to the stability, safety, and future industrial development of our country. Every physician should realize this, because of the experiences he has gone through during the last two years. If no more, he needs but to scan a comparative table of the prices of drugs current before the

war and those ruling at the present time—with their rapid upward tendency.

Chemistry, pharmacy, and medicine are inextricably interwoven, and all three occupations are an absolute necessity for the welfare of the one hundred million people of this nation. "The Arts of Peace" will convince you of the truth of this statement.

Then let us, one and all, be contented with our lot: The June is here this morning, and the sun is shining hot. Oh! let us fill our hearts up with the glory of the day And banish ev'ry doubt and care and sorrow far away.

James Whitcomb Riley

STUDY YOUR DRUGS

Some day when you tire of the usual dull round of ultra-scientific papers that fill the pages of our journals, take up the study of the powers of some of our commoner drugs. You will soon be interested to note how very little is really known of their action and their *modus operandi*—and how clearly these may be ascertained; how accurately they may be applied to relieve pathologic conditions; and you will wonder what the profession is about, that it neglects this most promising field of investigation. For it is ripe for investigation. The entire *materia medica* remains to be restudied under the light of modern physiologic and pathologic knowledge. The older researches supply us little more than indications of the right directions to go, those most likely quickly to reward our efforts. We have scarcely any researches on drug action in pneumonia since the discovery of the pneumococcus, so how can we believe that the therapeutics of prehistoric times needs no modification now?

Begin with atropine. Study it clinically. Take its power of dilating the cutaneous capillaries. Apply that power wherever such an action is useful, as indicated in any affection that presents this as a desirable and beneficial manifestation. When you have mastered this one drug, you have the key that opens the way to the entire domain of modern, scientific therapeutics.

You may proceed to the study of the other members of the mydriatic group—hyoscine, hyoscyamine, duboisine, scopolamine, mandaroline. You may add as pendants the antagonists and synergists, taking in the pilocarpine group, the gelsemine group, the hypnotic group, the strychnine group; and if you have so far mastered these as to be able to differentiate between the applicabilities of the separate members of each, you will be ready to agree with the writer, that there is

enough in the study to reward the effort you have made.

Why not make a start *this month*?

THE PROBLEM OF THE TYPHOID-CARRIER

Last summer, Mackinac Island had an outbreak of typhoid-fever. This occurrence has been investigated by the Michigan State Board of Health, and the source of infection was traced to a woman employed at a dairy. It was ascertained that twenty-nine years previously this woman had had typhoid-fever. It would be highly interesting to follow her doing the intervening period, since there is no doubt that she has left behind a trail of typhoid-fever victims.

It is gratifying to feel assured that this outbreak was not a consequence of insanitary conditions on the Island and that this lovely resort is free from the faults that toward autumn send so many summer-visitors back to their city homes with systems swarming with the germs of typhoid-fever. The water at Mackinac, we know, is pure and the soil uncontaminated. However, the possibilities arising from the dairy in question may be duplicated anywhere, and with equally disastrous consequences.

The woman we speak of was employed at a certain dairy, and in handling the milk her urinary or fecal excretions in some way imparted the typhoid-bacilli to the milk.

Pleasant thought!

The place swarmed with flies, and there was an unprotected outhouse very close to the milkhouse. Wholly unnecessary, of course! It is a simple thing to construct a sanitary and safe privy, even where there is no sewer-system. We also know how to rid the premises of flies.

How?

Let us tell you.

Doctor Waugh has devised the following plan for application at his summer place near Muskegon, Michigan:

A tract is selected a goodly distance away from the house as well as from the well, and located between these and the lake further down, into which latter the drainage is carried—the water-table dropping in that direction. At the selected spot, a row of holes, each about 18 inches deep, is made with a posthole digger. Into one of these holes the garbage, washwater, and dishwater are poured, and a large fly-trap is set over the hole. When nearly full to the top, this hole is filled in with sand. Then

another hole is utilized in this way. In the place of such a filled-in-hole, there is planted a tree, shrub, or any suitable plant—let us say, beans or potatoes, the garbage thus serving as an excellent fertilizer.

In the autumn, when the Lumsden toilets are emptied, the excrementitious material is carted far back to some unsettled section, where it is deposited in holes similar to those described, and then fruit- or nut-trees set over each one thus filled in.

The conclusion drawn by the Michigan authorities from the Mackinac epidemic is that all milk should be pasteurized before leaving the dairy.

Meanwhile the woman who was the cause of the general infection is detained at the Cook County Hospital, where efforts are being made to rid her of the infectious organisms. Here is an opportunity that should be embraced, namely, to ascertain what agents are capable of ridding one's alimentary canal of typhoid bacilli. It should theoretically be more simple, in the premises, to degerminize a single individual than to pasteurize, year in and year out, the milk of a whole community.

Read the short article on typhoid carriers, printed in the What Others are Doing Department, this issue. It will show you how Carnot handles these individuals in France, mainly by the bacterin method.

MOSQUITO-NETS, AND COMPENSATION

Now, that fly-time has come and the buzz of the bluebottle is heard in the land, every sanitary journal, official and departmental, is beseeching its readers earnestly to swat the fly and to put up screens. But, while by the latter precaution we may exclude the germ-distributor, we find that, like other desirable things, this advantage must be paid for. Since Emerson formulated the law of compensation, the rest of humanity has been observing apt illustration of its wide applicability. Ergo—

On taking a flying trip from the still chilly regions of the Queen City of the Unsalted Seas away down into the South, we find the spring far advanced, the air redolent with blooming roses and resonant with the song of birds; however, these joys are compensated by the just-as-early swarms of flies and mosquitoes.

We retire to a bed which our thoughtful hostess has enshrouded with a lofty canopy of lace and drop off to sleep, happy and content in the conviction that we are immune

from winged nocturnal marauders. Good, but the bar that shuts out the foraging "skeeter" likewise hinders the circulation of the air, so that toward the morning hour we awake from a dream of being strangled by two "furriners" drawing a silken cord!

We, as physicians, know well that such dreams are associated with air-hunger. We likewise know that the meshes of a mosquito-net or of a screen admit very much less air than if the circumscribed space is unobstructed for the gleeful cruises of the piratic squadrons of muscous freebooters. In a general way, our patients know these things, of course, but very much in the uninterested, impersonal way in which they know of the Punic wars or the twenty-nine nationalities of Austro-Hungary. More and more the conviction deepens in us that the physician should seize upon the post of sanitary adviser.

The family doctor should be the family hygienist. The field is unoccupied; he has no competition—save, it may be, for the syndicated sageness of Doctor Evans. The exterrist who sells cures has no standing beside the internist who preserves health. The alarming array of "symptoms" portrayed in the patent-medicine almanac would cease to terrify the man whose doctor has just given him a life-insurance examination and assured him that he ails in nothing and will take down Methuselah's longevity record, if only he will eat more fruit, use less tobacco, squelch his grouch, clean up the back yard, move the toilet further from the well, get the decaying remnants of last year's potato crop out of his cellar and store in their place the sashes of his bedroom-windows, besides attending to a few other items of such everyday commonplace nature that anybody can comprehend them.

Put the proposition—and the monthly salary—before your patients, and hear what they have to say about it.

THE HOSPITAL IN MODERN PRACTICE

Little Rock, Arkansas, has a hospital with three hundred beds. Little Rock is not a large city nor the center of a populous section of territory; yet, the hospital is too small for the demands made upon it.

At Muskegon, Michigan, a youth was seized with acute rheumatic fever, and at once was whirled off to the hospital.

At Rosedale, Mississippi, we find several citizens who have been to the Mayo institution in Minnesota, for surgical operations.

From a small town in Tennessee, two residents are in sanatory institutions in Illinois, one of them for a number of years.

All over the land, the same story is repeated. The sick no longer are cared for in their homes or by the local doctors, but hurried off to city specialists and city hospitals.

What is there left for the doctor to do and how does he make his living? By the time a patient, cared for at home, has paid the salary of a trained nurse, the dietary and pharmaca expenses, there is very little left to pay the doctor; and he naturally prefers to send his patients to the hospital—but where does he come in?

Don't be in a hurry to wail over the degeneracy and commercialism of our profession, until you ascertain how the doctor pays for his food, clothing, rent, and the family expenses generally.

Really, it does not seem that this is the time to suggest that the doctor take the position of sanitary adviser, with a monthly salary for keeping his patients well, as much as it is to ask how else he is going to make his living. If there is any other way open to us, please tell us what it is.

The obvious demands action. Why wait, like a balky horse, until one has to build a fire under him to make him get on a move? Novelty attracts attention. Motion, activity wins support. Reforms and innovations are never so successful when one waits until they are forced on him. In any event, we must move, for, if we stand still, somebody else will be stepping on our heels.

No more does the doctor who is called look wise, ask a few questions, and pull out pencil and prescription-pad. We call on various specialists, to examine the various organs, the x-ray man, the laboratory-investigator, the bacteriologist; we let another prepare a vaccine or a serum; the well-starched nurse attends to the details; and, if all goes right and "according to Gunter," the coroner's physician makes the autopsy, and his report completes the case. Four—or five-thirds of his former duties having been absorbed by others, with corresponding portions of the patient's cash, the doctor attends to, and gets, what is left.

And that, generally, is himself.

THE TREATMENT OF GRIP

One qualification appears to be desirable in one who assumes the function of critic or of editor, this being that he know something about the subject upon which he undertakes

to write or about the writer of the stuff he chooses to criticize. For instance, here is a paper in a stately state medical journal, by a gentleman signing himself "Resident Pathologist" to a saintly hospital, on the treatment of bichloride poisoning. Not knowing the gentleman, we will assume that he has a right to ventilate his views, by virtue of his official position. But, we read: "At the present date, there has been no specific treatment worked out [for bichloride poisoning]. The idea of reducing the mercuric chloride to the mercurous chloride, by the administration of calcium sulphide, sodium phosphite, and so forth, has been the one most used. While this may be possible in the test tube, it has not proved of great value practically."

This is in the face of the very remarkable work done by Thomas A. Carter in the hospitals of Chicago. Evidently "Resident Pathologist" has not heard of this—but he should have known of it before presuming to write in authoritative manner on a problem on which human lives depend.

And now look at the article on the treatment of grip, contributed by Otto Lerch to the current number of *The Medical Standard*. Lerch has established a reputation as one of the most accomplished diagnosticians in the United States, and—rare combination since Da Costa—as a really skilled therapist. His work, therefore, is well worth republication.

Doctor Lerch dissents from the view that makes the Pfeiffer bacillus the sole pathogenic agent of influenza. This particular bacillus is rarely found in the blood, unless after death, when diagnosis seems rather late for practical purposes. This organism is also found in a large number of acute and chronic diseases. Clinical symptoms show grip as an epidemic appearing regularly with autumn and remaining until spring. "Osler calls this complication the friend of the aged. I wonder whether he looks forward to a visit of his friend now, when he is getting on in years."

"Nothing but hardening of the body and due caution will to some extent protect. . . . Quinine . . . I believe in its prophylactic properties. A 3-grain capsule at night will to some extent protect. . . . Rest in bed is the most important remedy to cure. . . . Nose and throat have to be freed from mucus thoroughly, and antiseptic sprays and gargles may then be used, and the nares anointed with borated vaseline. . . . Silvol may be used in nose and throat in watery solution, 5- to 40-percent. . . . Open the bowels at

once; mustard to chest and feet; ice to head; I have frequently seen dilated hearts shrink to normal size after purgation with calomel followed by a saline laxative. . . . Ventilate, keep temperature of room between 60 and 70 degrees; liquid diet—heavy meals may occasion fatal relapse.

"Specifics we have not. Vaccination and serums have proved failures. . . . Treatment entirely symptomatic; a large dose of quinine with a few grains of Dover's powder, with physiologic measures, will often abort the disease when given at the beginning of the attack. Quinine, small doses, seems to influence favorably the course. Aconite, to relieve congestion permanently; give to effect; bleeds the veins into the arteries, slows heart and respiration, lowers blood pressure and temperature, dilates arterioles and capillaries, increases all secretions and stops pain; a reliable tincture in drop doses—preferably the alkaloid. Aspirin, and the like, may be used to stop pain and lower the temperature when needed.

"Severe cough and pleuritic pains demand narcotics in small, repeated doses—codeine, dionin, morphine, steam inhalations of benzoin, cocaine, potassium bromide (0.6, to 200 Cc. water). A Priesnitz bandage around the neck is useful in severe angina. Ammonium chloride in large doses loosens sticky mucus. Cold is not well borne. Lukewarm sponge-baths, with sedatives or alcohol added; iced towels to abdomen for hyperpyrexia; but let alone a fever of 102 degrees. Watch the heart carefully, using strychnine, camphor, and caffeine early. Reserve digitalis and strophanthus till later, giving them intravenously in collapse. Relieve the neuralgia with quinine. Protect the kidneys by the free use of water and lemonade as long as the heart is intact. Keep the patient in bed and on diet until the pulse becomes steady, and until free from fever for some days. Treat the complications."

We are just going to italicize the last injunction: "Finally, a thorough examination of the patient has to be made in each case."

How often—oh! how often—in the days that have gone by, we have tingled with shame at some unlooked-for *contretemps* that has arisen, which we could easily have prevented had we taken the trouble to make that thorough examination, that really did not seem to be required at the time. Truly, it has been the rare exception that we have made such a searching investigation without discovering something of value, even of importance.

We have given merely these extracts from Lerch's paper, in order to show its practical value. The article appears in *The Medical Standard* for April, and it is well worth the trouble of procuring a copy.

The most precious things in the world are those which cannot be bought—the tender touch of a little child's fingers, the light in a woman's eyes, and the love in a woman's heart.

Myrtle Reed

PRACTICAL POINTERS FOR JUNE

Summer is at hand—and summer complaint. Watch the baby's diet, and lay in a stock of intestinal antiseptics.

Phytolacca is indicated in the treatment of a beginning mastitis. Use the concentration—"small doses frequently repeated."

Remember that in many a bad case of sciatica, immediate relief can be secured by injecting a solution of quinine and urea hydrochloride along the course of the nerve.

"The nitrites," says Bush, "first achieved repute in the treatment of angina pectoris." Yes, and glonoin is still the best remedy for the immediate relief of angina.

If any of your little patients are subject to attacks of vomiting with no demonstrable cause, examine the urine. You will frequently find it highly acid, and acetone will be found in it.

Do you recall Clock's remarkable paper in the *J. A. M. A.*, showing how easily summer-diarrhea in young children can be controlled with Bulgarian-bacillus cultures? He even found it unnecessary to discontinue the regular milk feedings.

For persistent colicky pains in the bowels, whether associated with constipation or occasional attacks of diarrhea, put your patient upon an emulsion of mineral oil. It often works like a charm.

Chionanthus is recommended by J. R. Herr, in *Ellingwood's Therapeutist*, for the treatment of diabetes. It is given in association with sodium bicarbonate and a strict diabetic diet.

Rowntree and Macht have been investigating digitalis from various sources—American, English, German. Wonder of wonders—the domestic leaves are the most active! Why should we not produce in this country all of this valuable plant that we consume?

"Every gallstone," says Moynihan, "is a tombstone erected to the evil memory of the germs that lie dead within it." By the way, have you ever tried the sodium-succinate

treatment of gallstone-disease? If not, why not do so?

Colloidal-gold injections are recommended by Longin and Camuset for the treatment of malignant measles. Worth trying, undoubtedly; but, if your patients are kept thoroughly saturated with calcium sulphide, you will not have any cases that are malignant.

An excellent protective salve to apply to the skin in order to drive mosquitoes away is one recommended by Zucker (*Berliner klin. Woch.*, Aug. 9, 1915), as follows:

| | |
|----------------------------|-------|
| Olei caryophylli. | 10.0 |
| Adipis lanae hydrosi. | 30.0 |
| Glyceriti amyli, q. s. ad. | 100.0 |

Next time you have a case of chorea try small doses of tartar emetic. My friend and colleague Doctor Zell has been trying this remedy in dogs (which are very subject to chorea), and he tells me it works like a charm. Who will do some experimental work and report results?

Chicago is proud of the fact that last year it had the lowest death rate from typhoid fever of any city of its class in the United States. There were only 5.4 deaths per 100,000 population from this disease, in this city, as compared with 5.5 in Boston, 6 in New York, 6.6 in Philadelphia, 7 in St. Louis, 7.8 in Cleveland, 12.3 in Detroit, 21.9 in Baltimore, and 24.7 in Pittsburgh.

Of course you have noted the beautiful results obtained by Pritchard in the treatment of colic in babies by the steady, everyday use of an emulsion of liquid petrolatum. This is now made so delightful that every child loves it and will take it eagerly as he would candy. Don't let the baby cry; don't resort to anodynes. Cure it with this oil.

Holt is skeptical as to the frequency of worms in children. However, Greil found intestinal parasites in 36 percent of 665 children living in and near Montgomery, Alabama. Hookworms were the most common; but 10 percent presented other parasites. Pinworms were the least frequent—only 1 percent; roundworms very common. Good old calomel and santonin will long continue to be popular.

Colic in infants—the young mother's despair! What can you do? Much—by careful regulation of food, based upon observation of the stool. Relief can be secured by means of enemas and infant's anodynes. To prevent recurrences, regulate the bowels carefully, using some palatable oil-emulsion, which lubricates the bowel from end to end, thereby alleviating the tendency to spasm.

When constipation is accompanied by

gaseous fermentation and when the stools are gray in color, Fanz (*New York Medical Journal*) says that hexamethylenamine gives good results, when prescribed in association with ox-gall, aloin, and cascara sagrada. This treatment, to us, suggests the bile-salts in association with hexamethylenamine, and any other laxative which may be indicated.

I have you a case of sciatica which you want to cure as well as relieve? Then examine your patient carefully for some focal infection that may be causing all the trouble. Only today I saw a patient who secured relief when a badly ulcerated tooth was extracted. Examine the tonsils, the gall-bladder, the appendix, the prostate gland, and, if your patient is a woman, the womb and its appendages.

Atropine is one of the most frequently indicated remedies; its power of actively dilating the capillaries renders it effective whenever the blood is to be drawn away from danger points into the skin, as in all hemorrhages, chills, neuralgias, internal hyperemias and congestions, cerebral anemias, and spasm in most forms. The range is so wide one wonders why this powerful and safe remedy has never been vaunted as a panacea.

Here is a new test as to whether a woman supposed to be in labor has true birth-pains or is suffering from "false pains." Bandler (*Archives of Diagnosis*, July, 1915, p. 236) states that any woman at term who does not go into labor after a few subcutaneous doses of pituitary extract, is not at that time in labor. In applying this test, Doctor Bandler gives as a first dose one-third of an ampule of pituitary extract, hypodermically; an equal quantity is administered in another half hour, and the remainder of the ampule after a like interval.

McIves and Price (*Jour. A. M. A.*, Feb. 12, 1916) treated 81 morphine addicts—mostly denizens of the tenderloin. Twenty-one of these declared they learned the effects of the drug through its hypodermic administration to them by a physician or through a physician's prescription. *The Providence Medical Journal*, March, 1916, says that very little credence should be placed in the statements of prostitutes, crooks and thieves. "The personal experience of thousands of reputable physicians will bear out the contention that a very small proportion of drug users can truthfully ascribe their habit to dereliction of the profession, and the publication of such statistics and conclusions does the profession an injustice, while affording its enemies means for further assaults."

Leading Articles

The Arts of Peace

Or the Relation of Chemistry to Industry

BY AN AMERICAN CHEMIST.

EDITORIAL NOTE.—This important article was published originally in the April 8, 1916, number of "The Laneeet-Clinic." We are reproducing it with the permission of its editor, Doctor Fischer. As the readers of "Clinical Medicine" know, it is but rarely that we reproduce in these pages articles that have appeared elsewhere. When we do so, it is because we believe such article to be of very unusual interest and importance. This is the case in this instance. This paper should be read by every physician who is now thinking about "preparedness"—and by "preparedness" we do not mean preparation for war, but rather preparation for the industrial contest in which the people of this nation will be involved after the great European war now waging is brought to an end. "American Chemist" shows in this paper, more clearly than we have seen it demonstrated elsewhere, how vitally chemistry (and chemistry includes pharmacy and medicine as well) is concerned in the future life of America. The article is not a medical one, but I wish every medical man in the country might read it. The editor wishes to add that he has no interest in the manufacture of explosives.

WE hear a great deal nowadays about preparedness, that our country is not in a position to meet successfully an attack from a foreign power, that our army and navy should be built up, etc. It has even been urged that we create a standing army of at least a million men, and that our navy be increased to equal, if not excel, that of any foreign power. We are constantly reminded that Germany has prepared for the present conflict for the last forty years, and that if she had not thus followed the program of Bismarck, she would not have been able to make the great record she has in the last eighteen months.

As everyone knows, Germany has a tremendous army and during recent years has developed a great navy. If we analyze Germany's preparedness, we soon realize that she has striven under both these arms not only to build up great corps of trained men, but that she has also seen that even the largest armies and the largest navies are absolutely powerless if not supplied with necessary ammunition. An ultimate analysis of the situation shows, therefore, that the crux of preparedness consists in an ability to manufacture explosives of high quality and in tremendous quantities, and that this manufacture must be able to go on and in sufficient amount to meet all needs, even when war is actually in progress.

This being the case, let us consider what explosives are, whence they may be obtained and why they are able to do what they do.

Explosives are chemical compounds or mixtures of such, which, owing to their unstable chemical constitution, readily decompose into simpler bodies, in which process they set free enormous volumes of gases that exert tremendous pressure.

The Chemistry of Explosives

The essential element in all explosives is nitrogen. Generally speaking, an explosive body of more or less potency is formed whenever the chemical group NO_2 is introduced into any organic compound. The process is called "nitrating." When such nitrated organic compounds are ignited or detonated, the oxygen of the NO_2 group combines with the carbon atom of the organic body to which it was joined and nitrogen and oxygen is broken and the oxygen rushes over to unite with the carbon atom.

Petroleum bodies or paraffins are of such nature that they can not be nitrated directly in order to produce explosives. About six months ago, Rittman, a government employee, demonstrated that benzol and toluol could be made from petroleum. The newspapers immediately announced that now, through the Rittman process, a way had been found to make unlimited quantities of dyes and explosives. It is true that Rittman did succeed in making benzol and toluol by heating petroleum vapors under pressure and thereby breaking up the paraffins into aromatic compounds, but to the present date the process remains of purely laboratory and not

practical interest. Whether the process can be developed to fulfill the predictions made for it, remains to be seen.

Nitrogen is in itself the most inert of chemical elements, but when, through the expenditure of great energy, it is united to some other element and introduced into a molecule, this same energy is again set free when the element with which it was originally united is given a chance to combine with some other element. Nitrogen, as it were, wants to live alone. The celebrated chemist Berzelius once said that nitrogen is best recognized by the properties which it does not possess.

Nitrogen and carbon, therefore, represent the essential constituents of explosives. But unlike most commodities, they can not be stored in large quantities, for the risk is too great. Even if storehouses for them could be provided, they would have to be built miles from any city or town. Their location would then be inconvenient in days of need. The only practical way out of the difficulty resides in the possibilities of being able to manufacture explosives in amounts equal to the rate of daily consumption, even when war is in progress.

Why Making Explosives is Linked with Dyestuff Industry in Germany

In trying to meet this need, Germany realized that explosive works could not be built merely to stand idle during times of peace, for every factory, when idle, deteriorates rapidly. The question, therefore, resolved itself into the feasibility of encouraging industries manufacturing products for which there is a steady demand in times of peace, but which in times of war could have their equipment converted into explosive factories.

Germany possesses a system by which she obtains at all times expert advice from men who have distinguished themselves in their chosen line of endeavor. These are appointed as her "Geheimräthe," that is to say, her privy-councilors, or secret advisors. The German government does not embark upon any new project before it has had the advice of these men, whose opinions are based upon a thorough and scientific investigation of the matter in hand. It is this method that has made her the most efficient nation in the world.

The dyestuff and the pharmaceutical industries—especially the former—were decided upon by these men as lending themselves most readily to the manufacture of explosives. The German government therefore made it a

point to foster and encourage them. As a result of this care, the dye industry of Germany has become one of its most profitable ones. It produced before the war 80 percent of the world's output in dyes, and declared dividends averaging 24 percent per year. The United States consumes only some 10 percent of Germany's output.

A sketch of the history of this industry gives an idea of its rapid growth, its influence upon commerce, and its value.

History of the Dye Industry

The modern dye industry started when W. H. Perkin, an Englishman, obtained on August 20, 1858, a patent for the production of a dyestuff known as "Perkin's mauve," from anilin. The actual production of this dye was started in France, the French making use of the information contained in Perkin's patent specifications. Its manufacture soon spread to the industrial centers of all the world and many patents were obtained in different countries. Few of these proved commercially successful.

The production of mauve from anilin stimulated great activity in chemical research, so that soon many other dyes were produced from this substance. Zinin's discovery that anilin could be synthesized from benzol (a process still followed to this day) made possible the production of anilin dyes commercially and in large quantities.

In 1859, Hofmann discovered magenta, so named because in that year the Battle of Magenta was fought. Hofmann did more, perhaps, than any other chemist to investigate the nature of dyestuffs and to determine their chemical composition. Due to his efforts primarily, England became the foremost country in the production of dyes.

In 1862, when the whole dye industry was still in infancy, Hofmann wrote: "Instead of disbursing her annual millions for these substances (dyes), England will, beyond question, at no distant day, become herself the greatest color-producing country in the world; nay, by the very strangest of revolutions, she may ere long send her coal-derived blues to indigo-growing India, her distilled crimson to cochineal-producing Mexico, and her fossil substitutes for quercitron and safflower to China, Japan and the other countries whence these articles are now derived." Hofmann's forecast came true only in part. England had vast coal fields at her disposal and her metallurgical industries were becoming more important every day. Large quantities of coke were needed, and when it

was found that the by-products of coal distillation could be worked up for dyestuffs and therefore had value, a great impetus was given to tar distillation. Through the combination, England soon outrivaled all other countries industrially. The tar distillation industry in England thrived and its output rose to be valued in the millions.

In the meantime, German industry was looking askance at the progress England was making. The German mind is particularly fitted for chemical research, as infinite patience and the faculty of minute and careful observation are necessary to carry on successfully this kind of work. Such men as Caro Graebe, Lieberman, Mischler, and Griess, through their brilliant work, gave the dyestuff industry in Germany an impetus which placed it in the foremost rank of scientific achievement.

During the early seventies, Alfred Nobel, Swedish engineer, devoted his time to the study of explosives. Many facts regarding the explosive-mixtures and detonators were known, but it remained for this able man to put the manufacture of explosives on a scientific footing. He was attracted to the work by observations he had made on the tremendous force that could be generated through the use of certain chemical bodies. It had previously proved exceedingly dangerous to use and to store large quantities of explosive chemicals, as it was not known when these substances would go off or what were the causes determining this. Study of the action of these bodies promised much fruit. It became the aim to stabilize their action and control their explosive force. Research soon showed that a number of substances which are the products of the distillation of coal and which were used in the dyestuff industries, served well in this connection. Bismarck, who was very fond of the company of scientific men, learned to his delight (from these friends) the value of tar distillation products for the manufacture of ammunition. Having a far-seeing mind, it did not take him long to recognize that the nation having the ability to manufacture large quantities of high-power explosives of greater force than could be manufactured by other nations, would have a tremendous advantage in times of war.

As is well known, the German universities are supported in great measure by the government, and as the dyestuff industry is an eminently scientific one, an intimate connection between these industries and the universities soon arose. It became the aim of

the German government to foster the dyestuff industries to the point where, in case of war, they could be converted into explosive factories large enough to take care of whatever demands a great war might create.

Let me emphasize again this enormous advantage to Germany, in fact, the necessity for her very existence, of harboring within her borders an industry which used the same raw products as an explosive industry, and of building this up to the utmost.

Building Up Foreign Trade

The consumption of dyestuffs in Germany proper is small, and owing to her size she could from the start never hope to become a large consumer herself. It was therefore necessary to build up a large foreign trade. To bring this about, special concessions in freight rates for export were granted and taxes were even remitted in order to help the general development. The spirit of scientific research was encouraged and special pensions for those men who had devoted a certain number of years to research were provided for. This made it possible to employ research chemists at exceedingly low salaries. Such advantages, with many others, helped Germany to develop her chemical industries beyond those of any other nation. It was soon found that, owing to the increased output of the chemical plants resulting from this encouragement, Germany was able to manufacture more cheaply than other nations, and, that she was also able to produce products of higher quality than those made in other countries.

Government Cooperation

Manufacturers who use chemicals and dyestuffs must buy in the cheapest market, or they can not meet competition. Foreign nations soon found it was difficult for them to compete with Germany, and many an industry which was started in the United States was put out of business because of being undersold by German products. It was the combination of expert chemical skill, favorable conditions under which they could manufacture, the genius of expert business management and the minute study of detail that helped the Germans to work up a tremendous chemical trade and especially in dyestuffs. The existence of trade conventions, known as Kartels, are of incalculable value in building up an industry. The Kartels recognize that competition carried to the extreme is the death of trade and not its life, as our government would have us believe. In

Germany, therefore, it is legal to limit competition, to have price agreements and to pool profits. In other words, the entire German dyestuff trade acts like a single corporation and can fight to better advantage any number of individual companies acting independently, for independently our companies must act or else they are guilty of illegal practice and subject to punishment. Our laws in this respect, although presumably made to favor United States citizens, really work to their detriment.

The Chemical Industry in America

The United States at one time held ten dyestuff factories. In 1883, the duty of fifty cents per pound on dyes was removed and there was substituted for it an *ad valorem* duty of 30 percent (which still exists). In spite of this 30 percent protection, all the dyestuff plants, with three exceptions, perished. These three had a hard time. One of them was started in Buffalo, in 1879, by a very wealthy man. For sixteen years, fresh capital was poured into it and not one cent of profit was taken out. Then a small percentage was paid on the money invested, but, even up to date, the company has not realized a yearly yield of 6 percent on its investment since the commencement of business.

Another company has been in existence since 1882, but has never made money until this war broke out. This company manufactures ultramarine, the profits from which have enabled it to stay in business.

The third company could not stand the strain of German competition and sold out to a German firm in 1899, since which time it manufactures a few colors and uses its buildings as storerooms.

Nearly all dyestuffs of commercial importance were invented by Germans. The patent concession gave them a monopoly upon their inventions for fourteen years. The prices permitted to be charged for these patented dyes were so arranged that during the life of the patent the profits realized would repay the price paid for the original plant. At the expiration of a patent a plant costing at times as much as one million dollars would then be placed on the books as valued at one mark. Let me cite a concrete example. Auramine, a yellow dyestuff of great beauty and strength, sold at an average price of \$4.48 during the life of the patent. When the patent expired, the price in the United States became 48 cents, and any one who cared to manufacture it was free to do so.

Did any one in the United States take it up?

No, decidedly not. The American manufacturer would have been compelled to build a plant costing perhaps a million dollars. This would have meant an overhead expense on the plant of one hundred thousand dollars. The manufacturer would have been further handicapped by his lack of experience (which the German firm gathered in working the process fourteen years) and the chances are that it would take him several years before he would have been able to get the same great yields, or equally good ones, as compared with the German. The price of forty-eight cents was fixed upon by the Germans because they knew that there was no chance at this figure for the American to compete successfully in the manufacture of the product.

It was the usual habit of German dyestuff manufacturers, when they saw that a dyestuff was made successfully in the United States, to undersell in our market, when necessary, even at prices below the cost of production, and to continue doing this until the American manufacturer was forced to discontinue. As soon as he was out of the market, the price would be raised, even to above that which originally ruled. What took place in the United States took place in other countries as well. The German government has thus, through the dyestuff manufacturers, pursued a relentless fight against other nations in their building up of a dye industry.

The activity of German dyestuff manufacturers has been so thorough that they induced certain of our own manufacturers, who needed dyes in their business, to exert their influence to keep the tariff as low as possible. The foreign manufacturers maintained that dyestuffs should be considered raw material, and that it was therefore to our own manufacturers' interest to keep the tariff low. Most of the latter accepted this narrow-sighted policy and did not wake up to the results of their action until the war broke out and they were cut off from their usual sources of supply. With the beginning of the war, a million American workmen were thrown out of employment, for this number is employed in industries to which a continuous dyestuff supply is absolutely essential.

From what I have said you will understand the German government's interest in the development of huge dyestuff works.

Importance of Benzol and Toluol

Now, let us see what happened when the war broke out.

A general order was given in Germany that all dyestuff production should be discontinued

at once and that the factories formerly interested in this should immediately follow the program which had been mapped out years ago, whereby every vat, every tank and kettle was to be rearranged, according to predetermined plans, and the manufacture of certain explosives commenced. A comprehensive plan for all this had been worked out in peace times, and so it was known to the pound just how much of the different explosives could be made in every factory that had previously made dyes. Moreover, all these factories had, of course, large supplies of crude material on hand—just as every factory doing a large business must have—all of which could now be worked up into some form of explosive. It is readily seen what a tremendous advantage Germany had in this ability to convert, at almost a moment's notice, great plants into explosive factories capable of large output.

Benzol and toluol are the chief raw products of the explosive industry and are derived solely from the distillation of coal. The German dyestuff manufacturers have agreements with the coke-oven men for these supplies and the government determines the quantity of benzol and toluol which is to be carried in stock, its method of storage and its location. If the coke-oven men do not live up to their contracts the government steps in (through its general staff) and sees that they do. It also controls the output, and in times of war requisitions the ovens and determines for what purposes benzol and toluol may be used.

These two products constitute perhaps the best needed for the manufacture of explosives, but other raw products are also of great importance. Almost any organic body containing a hydrogen atom or atoms which may be replaced by the nitro-group can be converted into an explosive. Glycerin, starch, certain types of sugar, cotton and many other substances may be used in this way. To be of value as raw material for the manufacture of explosives, almost unlimited quantities must be available. Glycerin and cotton, in ordinary times, answer this requirement, but since the war both have been declared contraband, with the result that they have become scarce in Germany. Glycerin has been used for years for the manufacture of nitroglycerin, but cotton has come into use only recently for the manufacture of nitrocellulose, a very powerful explosive.

Why Wood-Pulp Has Advanced

England always declared in favor of and insisted upon cotton being considered non-

contraband, but she has changed her mind since the present conflict started and has insisted since that it should no longer be classed as noncontraband. This change of attitude has been severely criticized, but in passing judgment we must not forget that conditions have changed and that cotton is now a raw product which may be used for the manufacture of explosives. Germany recently made a proposal to the United States to send over a cargo of dyestuffs in return for a cargo of cotton. As England, through her fleet, has command of the seas, her consent to this was necessary. Diplomatic negotiations failed to bring it. Germany, however, was not greatly disturbed when the negotiations fell through. For some time past, German chemists, at the instigation of the general staff, have worked on substitutes for cotton and have discovered in wood-pulp a product which, while not as good as nitrated cotton, still gives very satisfactory results. The available supply of wood-pulp in Germany has been requisitioned, and an order has been given to limit the size of all newspapers. An old newspaper has to be returned before a new one is issued. The price of wood-pulp has risen since this order, and, in all probability wood-pulp will shortly be declared contraband.

Glycerin is another product which, on account of its use in explosives, has become very scarce and expensive. The ruling price before the war was in the neighborhood of twelve cents per pound; now it is fifty-two cents a pound, and there is very little obtainable at this price.

The Invaluable Nitrogen

Germany has also always striven to bring about conditions within her own confines which would enable her to have available at any time all the raw materials needed for explosives. As I have pointed out, nitrogen compounds are the basis of all explosives, and it is absolutely essential that unlimited supplies of nitrogen compounds be available. Germany met this problem by perfecting methods of obtaining nitrogen products from the nitrogen contained in the air. This work was also suggested and developed through the general staff.

Formerly Chili saltpeter was the basis of all nitrogen compounds, and as this salt could be obtained only from Chili, Germany realized the absolute importance of her becoming independent of all other nations in this essential product, without which she could not conduct a war of any duration.

To obtain nitrogen products from air, a source of cheap electric energy is essential. On looking over the ground, Germany found that the cheapest sources of electric energy lay in the waterfalls of Norway. She established in consequence large industries for making nitrogen products there and then shipped these products to Germany. After the war began, Germany realized that it would be impossible for her to obtain the nitrogen products which she was making in Norway, in consequence of which she immediately started six plants on the Rhine. Here coal is coked and the distillates are used for making explosives, while the gas produced in the process of coking is used in gas engines, which in turn, are coupled to huge generators for making the electricity required for the manufacture of the nitrogen compounds necessary for the explosives out of the nitrogen in the air. At one stroke, therefore, she obtains not only her distillates, such as benzol and toluol, but also the nitric acid which is used for nitrating these products to make the smokeless powder, the nitro-toluol, etc., which constitute the modern sinews of war.

When the army of occupation entered Belgium, over one hundred experienced coke-oven men were taken along to operate the coke ovens of the captured country, so that the benzol and toluol obtained as by-products from these could be properly made and sent to Germany for the manufacture there of explosives. Solvay, the Belgian, who perhaps has done more than any other one man to discover methods for the recovery of the by-products of coal distillates, was seized by the Germans and held as a hostage.

From what I have said, you will see that the preparedness program of Germany is a comprehensive one. It may perhaps teach us also how important, if not absolutely essential, is the development of chemical

industries in the United States if she is ever to be prepared to meet a foreign foe.

Germany with her large guns capable of throwing a projectile twenty-six miles would be powerless before an enemy if these guns were without the propelling power which is supplied by means of explosives. As a *sine qua non* of preparedness alone, were there no other reasons for it, the United States should begin to develop her chemical industries. How she can best do this will require much thought and study. Our chemical industries, which have never amounted to much until this war, need to be encouraged and the government must in some way devise means for the production of all the explosives that may be necessary within her own boundaries. The training of men for the army and navy is but the smallest part of a program of preparedness. The building up of a chemical industry which can supply the wants of an army and navy in case of war is a far more difficult one.

Germany has, at the present time, over four hundred million dollars invested in her dyestuff industries. In the United States about three millions were thus invested before the war. These and similar facts make it easy to see that unless the government lends a hand it will be impossible for the United States dyestuff industries, with their three millions of capital, to compete with the four hundred millions of Germany. Years of experience have, moreover, given German manufacturers a tremendous advantage over us. It will take much ingenuity and more hard work on our part to equal their outputs in quantity, quality, or price. The matter of differences between wages in Germany and in the United States will not be the great item, but the other things of which I have written will.

If preparedness is to be taken seriously, the United States needs to study the subject from angles which she has thus far ignored.

Puerperal Eclampsia

III. The Treatment of Eclamptic Convulsions

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

Professor of Obstetrics, Loyola University

[Continued from page 412, May issue.]

TWENTY-FIVE years ago, the treatment of puerperal eclampsia was as unsatisfactory as that of the albuminuria which led up to that condition, and despite

all our measures the albuminuria of the pregnant woman too often resulted in eclampsia, and then, no matter what our treatment, the eclampsia too often ended in the death of the victim. Although many remedies had

been suggested, medical men were filled with a feeling of helplessness when confronted by this calamity.

Forty years ago, in one of the worst cases of postpartum convulsions I have ever seen, seventeen convulsive seizures occurred in the twenty-four hours following delivery. The doctor, one of the best of that day, did little in the way of treatment, except trying to prevent the woman from injuring herself. The patient recovered and is alive today; however, many of the victims were not so fortunate.

The pessimism with which this subject naturally was regarded by the profession has not altogether disappeared in our day. Less than five years ago I heard a teacher of obstetrics assert that in the face of puerperal eclampsia we are practically helpless. This attitude, however, is no longer justified in view of the gratifying results that are being attained by presentday rational treatment. An intelligent trial of the veratrum treatment, such as will be outlined further on, will, I believe, convince any fair-minded man of its very great value. True, I have heard obstetricians declare that they had tried this treatment and it had failed, but close inquiry in every instance disclosed the fact that the cause of failure lay in the dosage and the method. Similarly, the results in the first two cases in which I used veratrum were not satisfactory for the very same reason. The secret of success lies, first, in administering very large dosage of the drug, and secondly, in following strictly the precautionary rules laid down for guarding against veratrum-poisoning.

Some of the Methods of Treatment in Vogue

It may be of interest to consider briefly the principal methods of treating puerperal convulsions that thus far have been employed; namely: active catharsis with some quickly acting drug, such as croton-oil; rectal administration of bromides or chloral hydrate; hypodermic injections of morphine, also of pilocarpine; inhalation of chloroform; blood-letting; forced delivery; and, lastly, the hypodermic use of veratrum viride. While it may be admitted that all of these are based on more or less rational grounds, they differ greatly in effectiveness, and, moreover, some of them are fraught with danger.

As to croton-oil, its use produces results that are good, so far as they go; but its value is too limited for a condition so serious as eclampsia. As an adjuvant to other treatment, it has a certain value.

The same may be said of enemas of bromides or of chloral. The sedative effect of these two drugs is desirable; if given in sufficiently large doses, however, they are so irritating to the rectum that they are expelled before absorption can take place.

A single hypodermic injection of morphine in moderate dose is permissible at first, for its sedative effect, until other measures can be instituted. It reduces the arterial pressure, and to that extent is helpful; but it is generally regarded as doing harm by its narcotic properties if given in larger amounts. A small dose of hyoscine, morphine and cactoid is, in my opinion, preferable to morphine alone.

Pilocarpine has been highly praised by some writers, and as vigorously denounced by others; to a certain degree, both sides are right. It is valuable, but dangerous; and its dangerous effects are less controllable than those produced by veratrum. Before I had learned the value of veratrum, pilocarpine was my mainstay in combating eclampsia, but I spent many an anxious hour watching my patients under its influence. The diaphoresis produced by it is very marked, and the bubbling râles in the lungs give evidence of internal diaphoresis besides the external, and suggest the danger of drowning the patient in her own secretions.

Administering chloroform by inhalation during an eclamptic seizure is very generally practiced, but I have always felt that this expedient is accorded more credit than the facts warrant. Indeed, I think its chief value consists in impressing those who are present.

Let us look at the facts for a moment. A patient is seized with a convolution. A chloroform-mask is placed over her face, and in a few minutes the attack begins to subside. Naturally, the chloroform is credited with having stopped the fit. But, has it really done so? The seizures are self-limited, rarely lasting longer than three minutes, when they stop, whether chloroform was given or not.

When we consider that, under favorable conditions, it takes from fifteen to twenty minutes to bring a patient under chloroform-narcosis, it is pertinent to inquire how much chloroform she will take into her system inside of three minutes, and when respiration is as nearly suspended as it is during an eclamptic seizure. If it were possible to foretell when an attack is going to take place, then possibly we might forestall it by means of chloroform; but, after the patient has come out of one seizure, we have no means of

knowing whether the next one will occur in ten minutes or in two hours, or whether there will occur another convulsion at all. So, the prophylactic use of chloroform is not practicable, while, as a means of stopping a seizure, I cannot say that I ever have seen it do any good.

For all that, I do not believe that the chloroform does any harm if given with reasonable care, and, therefore, feel that resort to it is justifiable by reason of the effect upon the bystanders as suggested above. Nor do I consider this to be quackery. The sight of a person in convulsions is so terrifying that laymen are unconvinced when told that little can be done during an attack beyond preventing the patient from injuring herself. When people see chloroform administered and then in a few minutes see the attack pass away, they feel that the doctor is doing something. The point I wish to make is, that the doctor himself should have no illusions upon the subject, and should realize that his effective work must be done between the attacks by other means.

Bloodletting has often been suggested, and occasionally practiced, with the idea of preventing the recurrence of the spasms. Theoretically, this would seem rational, as it causes reduction of the blood-pressure; and this is one of the things which it is desirable to accomplish. But bloodletting is no longer popular as a remedy for anything, and, possibly, for good reasons. It is a question whether depriving a patient of a large amount of blood in a great crisis may not have drawbacks that outweigh any temporary benefit. There seems to be no doubt that the preponderance of opinion at present is, that diluting the blood with physiologic salt solution is more useful in controlling the spasms than is the removal of part of the blood.

The Veratrum Treatment

For the past eighteen or twenty years, I have found veratrum viride so satisfactory in combating eclampsia that I have come to depend upon it almost entirely. So greatly, however, does success depend upon the manner in which this drug is employed, that a careful observation of certain strict rules of procedure is absolutely imperative. To attempt to force results in eclampsia by means of this powerful remedy without such rules clearly outlined in one's mind, would be as reckless as to undertake a laparotomy without possessing a thorough knowledge of anatomy.

I am not asserting that the method which I am about to describe is perfect; it may be capable of improvement, and I shall cordially welcome any suggestions in that direction. My method is an evolution, the product, to some extent, of lessons learned from unfortunate errors and failures, while for some of its features I am indebted to a report of 38 cases, as published about a dozen years ago, by Dr. Lapthorn Smith, of Montreal.

And these are the main points to be observed: (1) Very large doses; (2) hypodermic administration only; (3) recording the pulse every ten minutes. Let me consider these in the order named.

The Proper Dosage of Veratrum Viride

The dosage should be large enough to bring the patient thoroughly under the influence of the drug within one hour, but, yet, not so large as to produce veratrum poisoning. Too little of it means failure, while too much may prove disastrous. The difficulty of regulating the dosage is enhanced by the variation in strength of the common tincture of veratrum viride as sold in the drugstores. For this reason, I have for years carried in my obstetric bag a small bottle of Norwood's tincture. This preparation I have always found uniform in strength; but the doctor must be warned that it is five or six times as strong as the ordinary U. S. P. tincture and, hence, has to be used with care. The alkaloid veratrine would be ideal, so far as uniformity is concerned, but whether it would give the same results as the tincture in controlling the convulsions I do not know, never having used it. If any of your readers have had experience in this direction, I certainly should be glad to hear from them.

[Many readers of CLINICAL MEDICINE have reported experience with veratrine in eclampsia, and those who use it are enthusiastic advocates of this alkaloid.—ED.]

I am in the habit of giving 5 minims or 10 drops of Norwood's tincture for the initial dose, and repeating this every half hour or every hour, according to the frequency of the eclamptic seizures, until the pulse comes down to 60 per minute or the attacks cease.

The uncertain strength of the ordinary tincture was illustrated in a case I saw three years ago. The doctor in charge had given 15 minims of the U. S. P. tincture, and when I saw the patient two hours later, her pulse was down to below 30, with the other symptoms of overdosage in proportion. We had

rather an anxious night of it, although we did bring her out all right. It is possible, of course, that idiosyncrasy also played some part in this instance. It is a wise precaution, therefore, not to make the initial dose too large, rather depending upon repetition at shorter intervals for results. By watching the pulse very closely, the danger of overdosing can be guarded against.

Next: administration of veratrum viride by mouth, when given for eclampsia, should not be considered for one moment. Absorption from the digestive tract is too uncertain to be depended upon in giving a drug of such potency; while, when injected hypodermically, we can be reasonably sure that the rate of absorption will be fairly uniform. Experiment shows that, when used in this way, most drugs reach their maximum effect in about thirty or thirty-five minutes; but we must always bear in mind that the *maximum* effect of a drug is not the same thing as the *total* effect, for, a gradually decreasing absorption is going on for some time after the maximum has been reached. For this reason, if we give a second dose thirty minutes after the first one, we may get a greater effect than we want, unless we keep the above fact in mind. Unless the convulsions are recurring very frequently, it is better to allow an hour to elapse before repeating the dose. Of course, if the con-

vulsions do not recur, then the dose need not be repeated.

When a patient has had too much veratrum, the two most striking symptoms are, the great depression of the pulse and the extraordinary secretion of gastric mucus. In the only two cases of this kind that have come under my observation, the patients vomited almost continuously for two hours, bringing up easily enormous quantities of perfectly clear odorless mucus.

Thirdly: The administration of physiologic salt solution, either subcutaneously, by rectum or intravenously, is regarded by some as a valuable aid in controlling eclampsia. I am not certain as to its value.

Where the convulsions occur during labor, they usually cease with delivery, and this has led some obstetricians to advocate forced delivery in practically every case, even in those where labor has not begun. In my opinion, forced delivery should be resorted to conservatively. If labor is in progress, it is justifiable to aid dilatation or even to employ the forceps, to shorten the labor, provided that these means be used with sufficient moderation to avoid injury. If, however, convulsions occur before labor has set in, forced delivery should not be considered until it has become certain that they cannot be controlled with veratrum viride.

[*To be continued.*]

The Treatment of Syphilis

By A. B. CLOAK, M. D., Freedom, Pennsylvania

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AMONG the many diseases with which we have to do, syphilis probably stands first in importance with regard to drug-treatment. It is one of the few diseases for which we have a specific remedy, hence, is one of the few drug-curable afflictions.

But, possessing and administering the specific drug does not necessarily nor always mean a cure. The good results depend on the proper use of the remedy.

The treatment of syphilis, therefore, resolves itself into two classes; namely: the periodic symptom-relieving, nonmethodic, noncurative treatment; and the persistent, scientific curative administration of the specific or specifics.

The drugs of major importance and considered curative in effect are: mercury, potassium iodide, and salvarsan. Of minor

importance and used as aids to the major drugs, are: stillingia, echinacea, phytolacca, xanthoxylin, iron, sodium cacodylate, and a few others.

Vigorous systematic treatment should begin as soon as the diagnosis is made. In a large percentage of cases, the diagnosis can be made from the appearance of the primary lesion, together with the history. When in doubt, on account of vague history and unusual appearance of the lesion, a search should be made for the spirochæta pallida, the discovery of which in the lesion makes the diagnosis a certainty.

A quick and genuine cure usually depends on prompt and vigorous medication before the spirochetes have entrenched themselves in tissues not permeated by the drug or drugs, as our present methods depend more

on the destructive power of remedies, than on the production of antibodies.

Ten years ago, it was taught that treatment should not begin till the appearance of secondary manifestations. By this delay, the spirochetes are deeply imbedded, and protection walls about groups of organisms make the chance of cure less with each day of delay.

The Dosage of Salvarsan

Take a case of syphilis of recent acquisition, no contraindication being present. Give 0.6 Gram of salvarsan intravenously; repeat the same dose at intervals of six to ten days till five or six doses have been given, then give hypodermics of salicylate of mercury, in increasing doses, twice a week for a period of three months. Stop treatment for eight weeks, then have a Wassermann test made. If positive, repeat the same course; if negative, have a Wassermann test made at intervals of three months, till negative reactions have continued for a period of one year.

Employ the same series of salvarsan injections for infections of longer standing, with the difference that the administration of salvarsan should be preceded by a thorough course of mercury. In recent infections, one such course is usually sufficient. The older the infection, the more courses are required.

Salvarsan exerts its influence by actual contact with the spirochete, and, if a sufficient amount of it comes in contact with every spirillum in the body, then all are killed and the patient is free of lactic infection.

Ehrlich's original idea was, completely to sterilize the patient with one dose; but this proved to be practically impossible in most instances, hence, the administration of one dose is probably worse for the patient than giving none at all. The single dose kills a large number of the spirochetes and cripples the natural tendency of the body-cells to produce antibodies, hence, the spirochetes escaping create havoc in the body, because of lack of antibodies.

Thus we see the necessity for repeating salvarsan injections at short intervals, till there is a likelihood that the spirochetes have all been destroyed, using mercury afterward, to insure destruction of the few that might escape by reason of being imbedded deeply in some resisting tissue and not being reached by the salvarsan.

Technic of Intravenous Administration

It is generally considered by most authorities that the intravenous administration of

salvarsan is preferable to any other. It insures a more rapid and thorough effect, quick elimination, and is much less painful and disagreeable to the patient.

Dangerous and disagreeable reactions are usually due to faulty technic. It is important that only freshly distilled water be used, slightly alkaline in reaction, and about at body-temperature. The arm is prepared with the usual aseptic technic; the turniquet is applied above the elbow, bringing the median basilic vein into prominence. Then, with the warm physiologic salt solution in the container and running through the needle, insert the needle into the vein, removing the turniquet as the needle is inserted. A steady flow of the salt solution established and no local swelling produced shows the needle to be in the lumen of the vein. Then the salvarsan solution, previously prepared, is added to the salt solution already in the container. Generally 150 Cc. of salt solution to 0.6 Gram of salvarsan is sufficient, and, if the needle clearly is in the lumen of the vein and there is no leakage and a slow, even flow, 10 to 20 Cc. of solution is sufficient.

Some of the Accidents

Common accidents and reactions following the administration of salvarsan are:

First: The reaction caused by the organisms contained in old distilled water. The dead organisms and toxins introduced into the blood with the salvarsan produce a chemical compound highly poisonous. The result is, an elevation of temperature, chills, vomiting, headache, and sometimes death; also, arsenical poisoning, because of the breaking up of the drug by the water component.

Second: The socalled Herxheimer reaction, occurring in two to four days after administration, consists of swelling and consequent pressure effects in locations where the spirochetes exist in great numbers. When it occurs in nerve-centers or parts where nerves pass through a bony foramen, temporary paralysis and neuralgic pains are the result.

Third: Neurorecidive, occurring several weeks or months after the injection—supposed to be due to increased activity in existing lesions or lighting up of new lesions.

Fourth: A thrombus may be dislodged and do its characteristic damage.

Fifth: Admission of air into the vein and perhaps interference with the closure of a cardiac valve, with death resulting.

Sixth: Local swelling, inflammation and sloughing of tissues from allowing some of

the drug to escape into the tissues surrounding the vein. It is guarded against by allowing the salt solution to flow before placing the drug solution into the container.

Contraindications

There are certain general contraindications to the use of salvarsan; namely: heart-disease, nephritis, and brain syphilis. It may be used when these conditions are present, but the danger should be appreciated and extra precautions taken to guard against possible death.

Conditions in which salvarsan is especially indicated: (1) Abortive treatment, early. (2) Cases that show idiosyncrasy to mercury. (3) Cases upon which mercury has but little effect. (4) Positive Wassermann reaction after the long-continued use of mercury. (5) Local lesions, which make the patient a menace to his associates. (6) Malignant syphilis—prompt and full dose.

Neosalvarsan is less irritating, more convenient to use, and calls for a more simple technic, but it has been proved to be much less destructive to the spirochetes than is salvarsan. Also it is probably more toxic and more liable to be followed by accident.

Parasyphilitic Conditions

In the socalled parasyphilitic conditions, such as locomotor ataxia and paresis, it has been proven that the cells of the cerebro-spinal meninges have no selective action for salvarsan, and, hence it exerts no effect on the central nervous involvements when injected into the blood stream. Swift and Ellis, of New York, have instituted a method of intradural administration of salvarsanized serum.

Salvarsan is given intravenously in the

usual manner, and after a time varying from a few minutes to one hour, blood is withdrawn from the vein, kept in a low temperature for a few hours, and the serum separated. Of this serum, 12 Cc. is mixed with 18 Cc. of salt solution; this is sterilized and, at body-temperature, is injected into the spinal canal, after drawing off a like amount of spinal fluid. Brilliant results have been reported from this treatment, but the full value of the method has not yet been definitely determined.

Potassium iodide has no specific action on the spirochetes, but is extremely useful in breaking down cellular deposits and eliminating toxins from the body. Its administration at suitable periods in the treatment of syphilis opens the way for the specific action of mercury or salvarsan and clears the system of collected poisons.

The development of tuberculosis is a factor to be guarded against in the treatment of lues, and it behooves us to keep strict account of the action of the various organs and the general cellular condition of the body. As aids in maintaining the general bodily health, we call to our assistance the before-mentioned accessory antisyphilitic drugs: stillingia, xanthoxylin, phytolacca, and iron. The triple arsenates of iron, quinine and strychnine with nuclein, are very valuable. Do not neglect general hygienic measures, as baths, fresh air, and plenty of good food, ever keeping in mind that the destruction of the spirochete must not be accompanied by devitalization of the body of the patient.

[In connection with this paper, read also Doctor Neiman's article, page 407 last issue; also the papers by Dr. G. Frank Lydston, published in CLINICAL MEDICINE in our issues of January, February and March, 1914.—ED.]

Dilatation of the Anal Sphincters

By CHARLES J. DRUECK, M. D., Chicago, Illinois

WHEN thinking of preparing this paper, I had misgivings about my taking up the readers' time with a rather trivial procedure; however, in looking through the textbooks on surgery and even those especially devoted to rectal diseases, I find only the briefest mention of this subject, or even none at all, while, further, I know that many otherwise well-informed general practitioners are uncertain as to the best method of going about it.

Division of the sphincters, literally interpreted, means, to tear or rend asunder—and that is what usually occurs when the patient is chloroformed and the muscles are stretched by thrusting the thumbs through the anal sphincter and dragging them sideways until they touch the ischial tuberosities. But such brutal traumatism is seldom necessary nowadays. What we wish to accomplish in the majority of instances is, simply to overcome the natural or the exaggerated

contractility of the sphincter, so that we may open the anus sufficiently for examination or operation. If this can be accomplished without inducing general anesthesia, it brings within the scope of office and ambulant treatments many cases that formerly were attended to only in the hospital.

It is my object to outline here a plan of treatment that in my hands has yielded thoroughly satisfactory results in properly selected cases, one which obviates the dangers of chloroform without adding any disadvantages or complications. As this method is applicable both to examination and treatment, I offer it as having a well-defined field.

What We Accomplish by Divulsion

Stretching the sphincters forms an important step in the treatment of most rectal diseases, because it produces certain anatomical changes and definite physiological results. Stretching the muscle also stretches the fine nerve-filaments in its substance and produces a paralysis of these fine twigs. The action is the same as is produced when stretching the sciatic nerve. Localized inflammatory products are broken up and as a result sphincteric spasm, pruritus, and hypersensitiveness are mechanically relieved. In many instances, pent-up secretions are thus provided free drainage.

If this traumatism is limited to the nerve-branches in and about the sphincter, the regeneration of the nerve soon occurs and the paralysis is only temporary. If, however, the larger nerve-trunks out toward the ischial fossa are injured, regeneration is more remote and it is possible for cicatrization and atrophy to occur in the muscle before new nerve-tissue is built up, so that paralysis more or less permanent will result as a consequence.

The Preliminary Examination

Every thorough examination of the rectum includes a digital exploration, and thus the introduction of the fingers puts the sphincters on sufficient tension to disclose many important conditions. The finger, thoroughly anointed with vaseline or olive-oil (not glycerin, because that stimulates the bowel to evacuation), is gently insinuated, with a boring motion (remembering the direction of the rectum), forward toward the pubes until the sphincters are passed and then backward toward the sacrum. As we know, when the finger touches the sphincter, the latter contracts spasmodically. If however, the finger is thereupon held firmly in position

for a minute, the muscle again relaxes, when frequently the finger may be pushed in without difficulty. The sphincter now is slightly stretched, and the degree of contraction, or "bite," informs us of the tonus or irritability of the muscle.

This digital stretching is always essential in every new case before making the specular examination, because it not only demonstrates the condition of the muscle itself, but also discloses many diseased conditions that may be present, and thereby often enables the operator subsequently to dilate the sphincter instrumentally without causing much pain.

In newborn infants, stretching the sphincter with the obstetrician's little finger is one of the most powerful respiratory stimulants, while many times in older children the introduction of the syringe-tip acts as a sufficient stimulus to bring on defecation without giving an enema at all.

If in a given case the finger has been introduced and the sphincter and the rectum are found normally patulous, the anoscope or a speculum may be slowly introduced without causing pain and the lower rectum be dilated enough for examination or treatment. If, however, certain diseased conditions exist which have caused an irritable and hypersensitive sphincter, the muscles will be found to "bite" the finger abnormally, and then the anus needs preliminary preparation.

Producing Local Anesthesia

To overcome these conditions temporarily, we have recourse to local anesthesia, a condition that may be produced by a number of methods. Cocaine in weak solution may be used with perfect safety, provided the total amount of the drug used at any one sitting is less than 1-2 grain. By placing the hands on either buttock, the finger-tips resting close to the anus, the external sphincter may be gradually drawn open (everted) until half an inch of the mucous membrane rolls out. This surface is then sprayed with a 4-percent cocaine-solution to which has been added 1-2 percent of a 1 : 1000 adrenalin-solution. After the buttocks have been released, the anal canal is now treated by injecting with a short-nozzled piston-syringe 10 or 20 minimis of the same solution. Then the patient is placed in a semi recumbent position for about fine minutes, so that the full effect of the drug may be secured.

The adrenalin-solution in the mixture prolongs the anesthetic effect, limits the rapidity of the absorption of the cocaine, and lessens

the venous congestion that otherwise sometimes produces an annoying tenesmus lasting several hours following this procedure. It may be well to add that the solution should always be warmed to nearly the body-heat before being used, because warm solutions are more efficient than cold ones. Also, physiologic salt-solution, used instead of plain water, increases the absorbability of the cocaine.

After the expiration of five minutes, the sphincteric surface is fully anesthetized, but the muscle itself is not interfered with, and we are now ready to begin the instrumental dilatation just as well as if we were dealing with a normal, unirritated anal canal.

Kelly's Calibrator

Using what is known as Kelly's calibrator, this instrument is warmed to about body-heat and thoroughly anointed with any recognized lubricant, *except glycerin*, and then is gently pressed against the anus. By exercising pressure, say two pounds, the instrument is inserted with a boring motion. The sphincter can usually be dilated up to two inches in diameter in about five minutes. The pressure on the calibrator must be slight but steady. Any undue haste only excites spasm of the sphincter and retards progress.

If in the case at hand the sphincters are very irritable, it may be advisable at the first treatment to distend the fibers to only one inch, and then at each subsequent session slightly to increase the distention; the object being to stretch the muscle speedily to a diameter considerably larger than is ever produced by a fecal mass—which, in the natural evacuation of the bowels, is relatively slight.

Having dilated the anus as much as desired, the calibrator should be allowed to remain in place for ten or fifteen minutes, until the sphincteric grip is released. When thus the sphincter has been thoroughly dilated, the calibrator may be slowly withdrawn, the last half-inch of the instrument being withdrawn very slowly and crowded against the anterior quadrant of the sphincter. Firm pressure against the posterior wall of the anus with the examiner's free hand also prevents sudden spasm.

Occasionally it will happen that even after applying the cocaine a thorough dilatation is very painful at the first sitting. Should the patient complain of pain, the stretching must be diminished sufficiently to feel fairly comfortable, and the physician must content himself with only a partial dilatation at the

first treatment. The treatment under these circumstances should be repeated each day, gradually increasing the dilatation until the muscle is relaxed sufficiently for all purposes.

With the advent of mechanical vibration, has come another method of producing local anesthesia in certain instances. A vibratode is made to vibrate, or oscillate, upwards of 6000 times per minute, and these tremors are transmitted to the nerves of the surrounding soft tissues. In selected cases, this process gives very satisfactory results; it must not be employed in inflammatory cases, however.

Case I. Mr. H. S. complained of sharp, cutting pain in the rectum following defecation; also had itching at the anus and bowels were constipated. His anus was tightly contracted. Digital exploration was too painful to be satisfactory either to the patient or to myself. The anus was anesthetized with cocaine, as outlined above, and after waiting five minutes I completed my examination painlessly and satisfactorily.

When disease exists above the sphincters, this same method may be followed, and when the calibrator is withdrawn the anoscope or speculum may be introduced easily and without exciting spasm. The anal canal or rectum may be examined or treated just as if the patient were anesthetized, as plenty of room is obtained for treatment of diseases of the lower inch and one-half of the bowel.

In the treatment of internal hemorrhoids, ulcers, villous tumors or other conditions requiring minor operations or treatment upon the rectum, the parts can usually be distended sufficiently without a general anesthetic, but the dilatation must be performed slowly and patiently.

Value of Preliminary Digital Examination

In the early part of the paper I called attention to the importance of digital examination preceding the instrumental dilatation, because it furnishes the examiner precise information regarding the tone, or contractile power, of the sphincter.

If you can introduce your finger into the patient's rectum easily and without feeling the "bite," or spasm, of the sphincter, be very chary about introducing a speculum and dilating the anal canal, because what little contractile power is present may be easily dissipated and a permanent partial or complete paralysis result. For example:

A woman, at the age of 26 years, was delivered instrumentally of a large boy. The perineum was ruptured, but was promptly

repaired. She recovered and enjoyed good health, having complete control of the anus. Four years later, she was operated upon for hemorrhoids, and since that operation the sphincter has been completely paralyzed. The surgeon who operated informed me that he was positive that no undue traumatism was produced. I mention this case to show that, where the nerve supply of the sphincter has been previously injured, an instrumental dilatation may be fatal to good results; and hence, a previous digital examination is indispensable.

In operating upon the rectum, and particularly when it may be necessary to drag upon the parts, the nerve must be anesthetized as far back along its trunk as the traction will be appreciated, because a nerve may be perfectly numb at the point at which it is cut or clamped, but very much alive one-half inch farther on, and if this sensitive part is dragged when examining it will be appreciated by the patient as being at the nerve and because the same fibers are involved. Therefore, if in dilating the sphincter it is necessary to move or stretch the deeper nerves, especially if exudation or inflammation extends outside

of this muscle, it will be necessary to cocainize the nerves thoroughly outside of this area. In such cases, infiltration of the deeper nerves is necessary.

Having discoursed at some length upon the advantages of dilatation and hinted at operating upon the anus under local anesthesia, allow me to remind the reader that this method has its limitations. While cocaine or vibration may relieve the sensations of pain, they do not remove the fear or terror of being operated upon, and a highly nervous or excited patient may not be able to keep quiet or calm while he is conscious and realizes that the surgeon is at work. In a number of such cases, I completely failed to obtain any reasonable benefit from cocaine. In selected cases, however, I believe this method brings within the field of office work many patients who otherwise would be confined to their bed for several days or weeks, and also those who object to an anesthetic or in whom its administration would be inadvisable and who, consequently, continue for years with very painful and annoying ailments which might be promptly and easily relieved by their doctor.

A Discussion of Capital Punishment

By Two Convicted Criminals

A DEFENCE OF CAPITAL PUNISHMENT

By John Lacelaw, New York

A Prisoner in the New York County Penitentiary

DR. WILLIAM HENRY MOYNHIAN, chief of medical staff at the New York County penitentiary, recently brought to the editorial room of *The Prison Observer* (our institutional paper) the April and May (1915) issues of your really interesting publication, and called our attention to the articles from the pen of Louis Victor Eytine, a life-prisoner at the Arizona state prison at Florence, in which he strongly and very ably advocates the abolition of the death penalty.

I, too, am a prisoner and in a position to appreciate fully much of your correspondent's observations on crime and criminals; and it may be possible that because of this circumstance my own dissenting views may be accorded the additional weight that goes with my own present position. I may here remark that this added weight, in my opinion, is anything but convincing regarding the question, but, on the contrary, must,

considering the force of the law of self-preservation and other self-interest, operate in just the opposite way.

In the prison from which I write, there has recently been inaugurated a great change in the methods of handling the inmates, brought about through the fortunate circumstance of the appointment to the wardenship of Mr. John J. Murtha, who, as the readers may know, has substituted an enlightened, humane administration for the truly brutalizing methods of former days.

As Mr. Murtha is working it out, *the reformation of the prisoner* is the true function of the penal institution. By an impartial administration of equal justice to all, and a system of extended privileges, dependent on the good conduct of the recipient, he has built up what amounts to a concrete example of the beneficent results of the highest ideals in penology. Here I have learned that there is plenty of good in every man, if it only can be brought to the surface; and I have further learned that a prisoner, no matter what his crime, is deserving of his liberty just as soon

as his ideas of right and wrong are properly adjusted to conform to the laws of society.

There still remains, however, a legitimate place for the law of capital punishment, when it is applied, and applied only, to exactly that class of individuals mentioned by your correspondent as having told him that they never would have committed their crime had they thought they were going to get a life-sentence. Of course, they wouldn't; and just as soon as you make a life-sentence spell a real imprisonment to the end of life, you have the only adequate substitute for capital punishment. But, can you make a life-sentence really hold for life? I do not know, for, as long as human nature remains what it is, we always shall have to count on the pardon and the escape.

The Extreme Penalty Should Be Retained

Practically the only kind of murderer that suffers the death penalty nowadays is the one against whom has been proven, beyond the shadow of a doubt, premeditation and deliberation in the commission of the crime. These are the class of persons who coolly figure beforehand the chances of not getting caught. Now, take away this penalty, and how many more would essay the role for gain or their own personal vengeance when they can calmly figure out, according to their ability, all the uncertainties of a socalled life-sentence? It would appear that the deterrent effect of the penalty is actually established by the testimony of the prisoners referred to by Mr. Eytингe.

Murder statistics are useless as a basis for conclusion, unless you can give the exact details. To say that so many murders were committed and that there were only so many legal executions, proves nothing, except that there are an entirely too large a number of killings through impulse and passion. The ratio of lynchings to legal executions bears no true relation to the subject; neither does the large increase (if such be the case) of murder in time of war. These conditions point simply to the inadequacy of the law in the particular localities affected. It is apparent that law of sufficient strength would be the true remedy.

The proposition to abolish capital punishment together with the already wholly ineffective system of life imprisonment, if carried to its legitimate finality, would bring us back to exactly that primitive condition of summary vengeance—the eye for an eye and tooth for a tooth idea. On the other hand, leave one or the other, and make it

certain, and the kind of murder known as first-degree would be reduced to a minimum, or, in other words, confined to those persons who stood ready to give up their own lives on the gallows or in prison (a far worse fate) as the penalty of the crime. How many would there be?

To infer from the statistics, as your correspondent would have us do, that legal executions increase murder, is, to ignore many of the surrounding facts. We might go to China, where piracy is punishable by death. Wholesale executions often take place, but nobody would claim there is any appreciable increase in this form of crime, when, if we follow the line of argument submitted, it should now be an almost universal and recognized calling.

The parental idea of the state (answering your correspondent) is exactly the same as the parental idea of the physician toward his child, that is, to use to his utmost all means within his power to correct the faults he sees; still, nobody will deny that there is a final point which, when reached, fully justifies him in turning his child from his door for the protection and wellbeing of the rest of his family. A man's action, in this case, it should be remembered, is final and complete. The state exercises the same supreme right in the only way that it can, by execution, in the absence of irrevocable life imprisonment. The physician separates himself entirely from his child-patient, and the state has the same right. That three-fourths of the wardens are against capital punishment is but natural, but proves nothing. Certainly, nobody, if he can avoid it, would want to perform such a duty as executing a fellow man. The real wonder is, that there actually are (if there are) one-fourth their number who are willing to carry out this law.

Deserving Another Chance. Hope for Change of Heart

So much for the affirmative side of this question—and I regret very much that it is in controversy with a brother in durance vile, to agree with whom it would be both easier and much more pleasant. The editor of this journal mentioned, in his head-note, that Mr. Eytингe writes letters that "pull," and his article bears testimony to the truth of this statement. He pulled it from me in spite of my intentions, under the circumstances of our common predicament, to remain silent. However, like my comrade, I am glad I "got it off my chest," and I have no fear he will not recognize an honest dif-

ference of opinion. At the same time, I have no hesitation in saying that in every respect Mr. Eytinge belongs to the class previously mentioned by me, men who richly deserve being accorded another chance in life. To this end, my humble services are his to command.

It is a real pleasure to record my hearty endorsement of all that he writes on the question of castration and vasectomy, both of which measures strike me as repugnant in the extreme and positively inhuman. It appears that but a short three years back Mr. Eytinge himself was advocating these penalties just as strongly as he now opposes them, but now is very thankful that he had sense enough to change his views. There is hope here, and it may be that he may yet see a new light on the capital-punishment question when it concerns the one who coolly takes the girl he has ruined out in a row-boat and leaves her dead body at the bottom of the lake, in order that he may be free to ruin another; or the high police official who influences a criminal who is dependent on him for his very liberty to shoot down a gambler who has threatened to expose his official corruption.

In like manner, my heart is with him in the battle against King Alcohol, on whose doorstep I squarely lay my own failure to make use of the many opportunities that had come my way. Happily I have reached a point where the hip-hip-hooray side of life has lost for me its onetime fascinations. However, I approve of the action taken by Warden Allen, of Joliet, for the reason that a vote of penitentiary-prisoners, calling for government action on the liquor-question, would not be fair to those who use liquor moderately and keep out of trouble also. There is at present a crying need for government supervision over the manufacture and sale of all intoxicants, to the end that the rank, adulterated poisons, that masquerade as whisky, wine or beer, may be obliterated.

Yes, it is well, as your correspondent points out, that the illustrious citizens mentioned by him were not made the victims of legal castration. The names of Col. Robert L. Wolfe, of Columbus, and W. A. Hawkins, of Detroit, are, indeed, shining examples of how a misstep may often bring out in a man all the most desirable traits of character, to the benefit of himself and the everlasting benefit of that same society that once found it necessary to send him away.

The heredity- and environment-question,

as factors in producing criminals, will always be a fruitful cause of honest differences as to their relative responsibility. My own opinion is, that environment plays the larger part, but by a smaller margin than Mr. Eytinge would have us believe. We cannot get away from the fact that there is such a thing as class in humans; and class, you know, generally tells. One person has a natural leaning to right thinking and right living, while another comes into the world with natural inclinations that are just as certainly pointing in an opposite direction. The same home influences and general environment of life would, surely, have a harder task keeping the one straight than the other, with the danger of a fall being always more imminent for him whose parental characteristics are faulty.

Socialism comes next. If this highly recommended panacea could do all the things claimed for it, most of our troubles would disappear. However, my study of this question has led me to the conclusion that it is absolutely impracticable, as long as human nature remains as it is. Its extreme claims in regard to the great questions of our times are, in my judgment, purely mythical. The moderate school of socialism advocates many reforms that, if carried through gradually, would work for truly ideal conditions of life.

AN ARRAIGNMENT OF CAPITAL PUNISHMENT
By Louis Victor Eytinge, Florence, Arizona
Life-Prisoner in the Arizona State Prison

WHAT? Reply to Brother Lacelaw?
Surely—and thank you for the courtesy.

First: I would ask that every reader go over his paper once more and definitely establish what I must deny or controvert. Then, may not one ask whether Mr. Lacelaw has either advanced or denied anything? To my mind, his presentation is so inconclusive as to leave no fixed impression, no saliently striking feature to be removed. Yet, even so, let us try to undo that little which he has attempted to prove.

Mr. Lacelaw asserts that, as a prisoner, his "dissenting views may be accorded the weight that goes with his position." Frankly, I flatly deny his very *right* to speak, as a prisoner, for prisoners. His institution—Blackwell's Island—is a county workhouse for misdemeanants, petty offenders, while the real violator of the law goes to Sing-Sing, Auburn or like place. As a mere petty

offender, Mr. Lacelaw can not possibly have behind him the experience of the position that gives the right to speak authoritatively or even as a prisoner!

One might be inclined to prove my opponent's incapacity to speak on this subject by merely quoting his third paragraph, in which he tells of having learned—only very recently—through the few months of Warden Murtha's régime, that "there is plenty of good in every man, if it only can be brought to the surface." Wonderful! A discovery as old as the hills! Yet, my critic has but found out this philosophy of life since Warden Murtha has "substituted an enlightened humane administration." Mr. Murtha had been in office but three or four months when Lacelaw prepared his paper, yet, here we have a final judgment on his work in so short a time!

Conceding all the good that Murtha has done—and I grant this freely—yet, it seems ill-advised for any New York prisoner to set up as the highest ideal in penology a new warden, while the man responsible for the furthest advance in prison efficiency rests under a legal cloud—while the one man whose sincerity cannot be questioned is made the victim of as damnable a bit of political chicanery and character assassination as ever New York's political rottenness revealed.

That man is Thomas Mott Osborne, and to him should go all possible credit for all New York's prison-progress, as the prophet who prepared the path. Until New York shall have atoned for her shame, it ill becomes any prisoner hoisting any other warden as the "god out of the machine."

Capital Punishment Not Deterrent

However, sticking to the subject-matter, I submit that my opponent proves my own position, that capital punishment is not at all deterrent, when he admits that certain offenders would *not* have committed their murders had they thought they were to get a *life sentence*. Doesn't this prove life imprisonment more efficacious as a deterrent? When he admits that "life imprisonment is the only adequate substitute for the death penalty," I feel inclined to quote the words of the Great Condemned, who met His death penalty on the Cross—"Thou hast said it."

Still, my critic goes ahead and adds the proviso that as long as we have human nature we still shall have the pardon and the escape. Granted, and as long as we have human nature, there will be error of judg-

ment and accused innocence, and, if there be not accused innocence, let me give as witness Chief Baron Kelley, who stated that in his own experience as chief of the assizes no less than twenty-two innocent men were sentenced to death, seven of whom were actually executed. I wonder whether it be not better to have some guilty "lifers" earn a pardon than to have some innocent one earn the gallows! Do you, doctors, not vote for a life sentence, which gives a chance to rectify judicial error, rather than the death penalty, which destroys that which all the physicians in the world may not restore—*life?*

Some Pertinent Statistics

But, I want to protest, with all my force, against the insinuation that with a life sentence the guilty will escape through pardon—I protest against this as a silly exaggeration due to extreme ignorance of the subject. It would be well for my opponent to become versed in the statistics of this question of life-term prisoners. I am prepared to prove that more than 75 percent of lifers either die in prison or are transferred to asylums because of insanity.

Let me cite merely one state—one which has recently abolished capital punishment, and because of which fact the figures are fresher. These data show that in the state of Tennessee 89 percent of lifers die in the penitentiary, that only $5\frac{1}{4}$ percent are pardoned, and $5\frac{3}{4}$ percent have their sentences commuted. Let me remind my critic that of the pardons granted lifers these are, in many cases, but the privilege to breathe a few days and to die "outside the walls"—the dearest desire of every prisoner. Let me remind Mr. Lacelaw that in many states a lifer is not eligible to parole, save in from fifteen to thirty years, and, in his own state, after twenty years. How many men are there that are able to stand this living death, so long waiting, even in the best of prisons? I'm glad that Mr. Lacelaw brought in this sentimental exaggeration, for it gives one an opportunity to dispel an ignorant conception so commonly held.

And even so, has not Mr. Lacelaw pointed to the present writer as one who merited such parole or pardon? If there be *one* exception, then may there not be hundreds, considering the many thousands confined in our prisons? Again, if Mr. Lacelaw were to ask any reputable physician, he would find that the crime under which I myself am suffering is one that it not only is highly

improbable but practically impossible to commit; yet, I stood in the shadow of the gallows! And how many more may not there be who merit an equal vindication, yet, who have gone to a gallows' grave, convicted by even less evidence?

The downright truth is, that double, treble, yes, twenty times as many men escape all punishment by virtue of legal technicalities than through pardon, this being especially true in New York. However, Mr. Lacelaw is silent on this point. Make justice *certain*, as we say in the English manner, and our homicides will drop in number to a proportionate number—to less than one-fourth of our present rate. *Making justice sure will help to cure.*

What Figures Prove

Mr. Lacelaw sweeps aside, with a light wave of his hand, all the figures and statistics, the larger part of my paper, showing that capital punishment not only is not deterrent, but actually provocative of crime—showing that states without the death penalty show a decrease in homicide and an increase in law obedience—he sweeps all this aside with a light gesture and says, "Figures are useless as a basis for conclusions." What drive! To tell the thousands of physician-surgeons who begged the American people to quiet their Friedmann turtle-serum hysteria until "figures" could be had—the great army of scientific men who combated the sensationalism of the twilight-sleep craze with a demand for "figures"—to tell these men that figures are useless, when they are the ones to *demand* figures—who stand or fall by the law of averages.

If there is one thing on which conclusions may be based, and one thing only, it is that same law of averages. And, so, when the carefully compiled averages for ten years of Iowa and Wisconsin are compared, we see that Iowa, with its large native population, with its low rate of illiteracy, and its high per capita wealth, yet, has *two murders for every one of its neighboring state Wisconsin*, that has not the death penalty, handicapped though it is with a 65-percent foreign-born population; when we compare Ohio, with its electric chair and a murder rate *thrice* that of Michigan, without the death penalty, but with a lawless element in its lumber-camps and its immense mining-districts; when, I say, we compare these averages, what have we but *evidences* that justify us in saying that figures alone permit of the conclusions? And, judging by these conclusions, we see

that the death penalty is a menace to society, rather than a protection.

Degeneracy as a Factor of Crime

Mr. Lacelaw foolishly forgets that his audience is composed of scientific people, when he says that only those suffer the penalty against whom there has been proven premeditation and deliberation, beyond a shadow of doubt. I say he is foolish, for, the medical man knows that some 35 percent or more prisoners are physical defectives, some 30 percent or more are mental defectives; and, if this ratio holds or increases, it also holds for those who have died upon the scaffold. If, then, considerably more than half of all law violators are defectives, what shall we call the legalized execution of those defectives whom society slew and who otherwise might have been better treated? Should it be called "murdered through ignorance"?

We now know that all the physicians who examined Guiteau privately believed him insane, but that they dared not then, in the face of public passion and prejudice and unenlightened medicolegal procedure, save this man from the hanging given an insane man. Had the crazy crank Schrank, who fired at Roosevelt, discharged his shot a score of years ago, it is possible that he, too, might have ended on the bight of a rope.

I mention these cases merely as pointing the fact that half of the men legally executed should have been otherwise handled. Yet, Mr. Lacelaw says that only cool, designing villains are given the death penalty. Mr. Lacelaw would have been more nearly correct had he said that the rope is the poor man's punishment; for, it is my experience that 95 percent of those hung are without means to fight their cases through all the courts, with all the loopholes available to a Harry Thaw, to mention one.

Whosoever Sheds Blood

His statement is, that the abolition of capital punishment would bring into vogue summary vengeance or, as he puts it, "the eye for an eye, tooth for a tooth idea." If capital punishment be not that very thing, pray, what in the world is it? And the strongest argument offered in its support is that very "eye for an eye" quotation.

But, when those states which have abolished the death penalty show a *lower* homicide-rate, a smaller number of murders, is it not *proof* that the higher humanity is productive of a higher moral standard in the commonwealth?

The Iowa-Wisconsin figures, the Ohio-Michigan comparisons, all prove this.

From report 108, Fifty-fourth Congress, one may take these extracts: "In Belgium, the rate of homicide has decreased from 9.17 per million people before to 8.001 since the banishment of the death penalty. . . . There has been no increase in crime since the abolition of the death penalty in Holland. . . . Portugal shows that the number of homicides has decreased during the succeeding years."

In the reign of the "good" king Henry VIII, a mere handful of 72,000 people were executed in Britain, and in 1819 Great Britain still showed 180 causes for which men might be legally executed; yet, if we take Mr. Lacelaw's statement, he would have us believe that a reign of crime is sure to follow the natural progress in our human understanding that abolished all save three causes for capital punishment. He would have us believe that the world went backward when it stopped burning witches on Salem Hill. Possibly he would have us go back to the Draconian Code, when every offense was punishable by death. This is an old wornout cry, that has been heard with every humanitarian advance, "It will encourage crime"—a cry of the theorist stilled in the facing of facts.

Some Famous Murder-Cases

While I submitted any quantity of statistical data showing that legal executions do increase murder, I am glad that my critic brushes these aside and presents sentimental reasons. I am glad that he advances the Rosenthal-Becker murder as an instance, for one has but to remind him that the assassination of Rosenthal followed very close upon the heels of the execution of four men, within an hour, in his state of New York.

I have but to remind him that there were more homicides in the week following the execution of the "four gunmen" than in any two weeks in the previous history of New York.

I am glad, too, that he called up the case of Chester Gillette dumping the body of his sweetheart into a lake, for, I will remind him that in direct sequence there came the Beattie case in Virginia, the Richeson case in Massachusetts, this last one, in turn, furnishing the inspiration for the murder, by Father Schmidt, of his own woman.

I am glad, moreover, that Mr. Lacelaw likes my *simile* of the physician-parent and his child with that of the state and its ward—I

am glad, for there is not one single physician in this intensely *humane* profession who would, himself, execute his little son, if in a fit of boyish rage, the lad had killed a playmate. And, if medical men, who study the causes so that they may arrive at cures, understand the weaknesses, the lack of control, the dominating influences of childish defectiveness, are, yet, willing to try for a cure, why, in God's name, cannot the state do that thing with its erring ward?

Let me, for the moment, take the last case mentioned—Richeson and Father Schmidt. Here we have the polished preacher of Boston wishing to rid himself of his mistress. His crime is followed by punishment, but over in New York the crazy priest Schmidt is in the same predicament—he wishes to be rid of Anna Aumiller, and the solution of his problem comes when Richeson is executed. The inspiration is furnished him—he counts on being more successful than Richeson; but, if caught, why, it will soon be over with—for, doesn't he say, "The chair will soon end all"?

Let me take, now, another famous Boston case and compare it with these two. More than forty years ago, New England is shaken by a series of degenerative murders of young boys. One Jesse H. Pomeroy, himself a lad of fourteen, is convicted of these offenses, on evidence that today would be, perhaps, incomplete, with perhaps the medical world demanding medical care for the offender. Forty years is a long, long time, but Jesse Pomeroy is not forgotten. Guilty or not, it is not for me to say. What I do want to say is, that Richeson is forgotten and buried in his quicklime grave, while Jesse Pomeroy this day is tramping his cell in Charlestown. And, there lives no mother who can paint the dead, forgotten Richeson, the polished priestly murderer, in tones that will cause her growing sons to lift their soft hands toward heaven in an oath that they will not be Richesons—but that same mother can send those same boys into convulsions of repugnance, into soul-stirred avowals that they will not be Pomerroys.

Richeson's crime has been repeated again and again—those charged against Pomeroy never, at least not in that locality. And there—in this paragraph, if you please—is my absolute proof that the death penalty is not, nor can it ever be, anything of a deterrent of crime. I can quote Pestalozzi, who certifies to four women admitting to him that they killed their babes, after seeing another girl executed for infanticide. I can

quote you an instance, where on the occasion of a public hanging at Lebanon, Tennessee, two young men made up a viewing-stand and sold space for witnessing the gresome spectacle and—listen to this—within less than eighteen months both these men were hung for exactly the same crime as that committed by the victim they had exploited!

The Justification

I should not have replied to Mr. Lacelaw, save out of my keen desire to have medical men think more of this great question, for his argument defeats itself. Its quality is well shown in that futile reply to the fact that a symposium of prison-wardens showed more than three-fourths opposed to the death penalty. Note what a petty cause Mr. Lacelaw offers for ignoring this verdict: that they do not like to perform an unpleasant duty. He forgets that these men knew of the unpleasant duty when they took office—that many of them had been executing-officers for years—that all of them could assign deputies to the task—that with every legal killing most of them protested that the death penalty was inefficient, nondeterrent, and a dangerous lowering of public standards—that all of them had been in office

some time and as such they were the ones properly supposed to be the *real authorities* on such questions. He brushes all this aside as trivial.

I am perfectly willing that his entire argument be judged by his support of liquor, after conceding that his own ruin was brought about through that medium, when he asks that only adulterated liquors be prohibited. I am perfectly willing that his paper be judged by its claiming so much for "class," a plea for caste, or getting that out of the poorest of classes came that giant of Americanism and humanity, Abraham Lincoln, and many another leader of our lives.

On my desk is a little reproduction of Landseer's "Dignity and Impudence"—you know that painting, doctor—a picture of a barking terrier and a quiet mastiff, secure in his strength. I am tempted to mention this, because of Mr. Lacelaw's hope that, after I've had fifteen years of varied prison experience and constant study of this question, I might come to "see a new light on this capital-punishment question," perhaps under the tutelage of a man who discovers after only three months of a new warden that "there is plenty of good in every man if it can be brought to the surface." Mr. Murtha needs a better press-agent.

The Emergency Treatment of Poisoning

Practical Suggestions for the General Practitioner

By SAMUEL C. BEACH, M. D., Evanston, Illinois

[Continued from page 431, May issue.]

Veratrum

This drug exerts its principal effect on the heart, the pulse becoming small and rapid and nearly disappearing when any exertion is made. There is severe nausea and vomiting and the patient is very weak. There is also dimness of vision, increased flow of saliva, and cold wet skin. Death results from cardiac paralysis.

Treatment.—Strychnine hypodermically, with heat to the body, and brandy or ammonia per rectum, are all measures to be recommended. Keep the stomach empty after washing out, but give small pieces of ice to swallow, in the hope of allaying vomiting, which is vastly depressing. Morphine

may be successful in doing this, and it may be used.

Mercuric Chloride

The symptoms of bichloride of mercury poisoning begin within a half hour, with an acrid, metallic taste in the mouth, constricted feeling in the throat, retching, and a burning sensation in the gullet and stomach. A white coating forms at once on the shriveled lining of the mouth; the inflammation of the throat may involve the larynx, and the occurrence of acute edema may cause asphyxia. The pain in the stomach is severe, and usually is accompanied by nausea and the vomiting up of material streaked with blood. Later on there is purging, with bloody stools. Hemorrhage often occurs, this coming from

the stomach or the bowels. The urine is scanty or suppressed, the respiration difficult, the pulse thready and irregular. There is a tendency toward stupidity or even coma, which latter may finally supervene just before death. The early symptoms are always attended by prostration, great thirst, and restlessness. Death has resulted from 3 to 5 grains; yet, as much as 100 grains has been taken and, by virtue of prompt treatment, recovery has taken place. When the patient survives two or three days, constant surveillance of the kidneys must be maintained; for, the remote after-effects seem to be manifested most markedly on the kidneys, and the bowels and skin must be kept stimulated, so as to allow the nephritis to subside.

Treatment.—Give the most convenient albumin freely, such as flour paste, milk, eggs, fresh blood from a chicken, and the like. Remembering that excess of albumin redissolves the albuminate of mercury formed, the stomach should be frequently emptied either by emetics or washing. The gastroenteritis will call for demulcents, such as linseed-tea, bran-water, starch-solution, and the like. Inasmuch as the above antidotes are all readily obtained, this treatment may also be styled the emergency treatment.

Corrosive Mineral Acids

Sulphuric, nitric, and hydrochloric acid constitute this group. The common symptoms produced by them, when swallowed, are: severe burning pain in the mouth, gullet and stomach, vomiting of acid material containing shreds of mucous membrane streaked with blood, dysphagia and dyspnea, constipation, suppression of urine, tender abdomen, great thirst, restlessness, prostration. Later, danger arises from stricture of the esophagus; still later (chronic), from lessened alkalinity of the blood, which latter produces softening of the bones and general impairment of nutrition. Inasmuch as there are individual differences in the action of these acids, a brief summary of each will here be given, followed by a general treatment for all.

Sulphuric acid is the most powerfully corrosive of the three and produces immediate destruction of tissue, giving a whitish color, but which quickly turns to brown. On black clothing, the acid spot is red, and black on white cloth, destroying the fabric, which has a characteristic "oily" or "pasty" feel. Death may occur at once when the acid is taken on an empty stomach, or the intense irritation of the glottis may cause

spasm and death from suffocation before any acid enters the gullet or stomach.

Nitric acid is volatile, and inhalation of the fumes often produces serious injury or death. The stains produced are white at first, but quickly change to orange or reddish-brown. The vomited matter gives off orange-colored fumes, which are characteristic. The symptoms after inhalation may be delayed several hours and improvement even take place, when suddenly, even after one or two weeks, there is an alarming increase in severity of the symptoms, ending in pneumonia and death.

Hydrochloric acid is the least corrosive, failing to cause perforation except when left in contact with the tissues for some time. Being volatile, however, the fumes readily pervade the lungs, setting up intense irritation. The white vapor of the acid arising from the vomited matter is characteristic. The stain produced is light-yellow and not so rapidly destructive to tissues or fabric.

Treatment.—Do not use the stomach-tube, as there is great danger of perforating the already softened tissues. Give plenty of water containing, preferably, calcined magnesia; but chalk, whiting, wall plaster, lime-water, soda, borax or soapsuds may be used in emergency.

A word of caution here as to the use of carbonates, which give off carbon-dioxide gas in large amounts when met by an acid. The ebullition of this gas in large amounts may distend the stomach to such an extent as to cause rupture, therefore the alkaline hydroxides are to be given in preference. Never give the alkalis dry, but always in solution, as they act much more quickly. When vomiting occurs, the acid is usually in the first portions of vomited matter. When it is reasonably certain that all acid has been removed or neutralized, demulcents may be given, and also opium to quiet pain.

Treat burns on the skin by first washing and then coating with moist alkali.

Have the tracheotomy instruments always handy, as operative measures may either be necessary at once or later, due to edema of the larynx or cicatrical contraction of the esophagus.

Corrosive Alkalies

The hydroxides or the hydrates of sodium, potassium, and ammonium are considered together under this head, all of them showing a common solvent action on albumin, a saponifying action when mixed with fatty

matter, and an intense avidity for the water of the tissues.

The majority of cases are accidental in origin and due to lye and washing-soda, which are both impure mixtures of sodium and potassium hydroxide and carbonate.

The symptoms are those of the corrosive acids, to which may be added general shock, varying with the location of the part attacked. There is burning pain in the mouth, gullet, and stomach, vomiting of bloody and shreddy matter, colicky pains and abdominal tenderness. Surviving the initial symptoms through prompt treatment, the patient may die later from the effects of the esophageal stricture produced.

Treatment.—This consists in the administration of any of the most readily available weak acids, such as vinegar, diluted lemon-juice, cream of tartar, and the like. Milk, olive-oil, and melted butter or lard will neutralize the alkali, but not so promptly. Do not use the stomach-tube, for fear of causing perforation. The other symptoms are to be treated as they arise. Have instruments for emergency-tracheotomy at hand.

An individual difference may be noted for ammonium hydrate (ammonia), which, being volatile, acts readily on the lungs and produces violent inflammatory reaction. It is present in many households as "hartshorn" and "ammonia," being used to remove paint and stains.

Chloral Hydrate

This drug, when taken in poisonous doses, produces deep sleep like that of anesthesia, from which it is impossible to arouse the patient. The breathing is shallow and irregular, the pulse can hardly be perceived, and the face is cyanosed. The extremities are cold and there is severe general depression, death usually being due to respiratory failure.

Treatment of Acute Poisoning.—Chloral is so soluble and so rapidly absorbed that local measures do but little good, unless the victim is seen at once. Therefore, physiological antidotes should be given, and strychnine hypodermically will be found as good as any. Hot coffee may be given by mouth and per-

rectum. Inhalation of oxygen-gas has proved of great value and should always be used when possible, artificial respiration being performed in all cases until the oxygen can be procured.

Chloral is sometimes used habitually and then may produce conditions difficult to diagnose. Among these are disturbances of digestion, loss of weight, diarrhea, insomnia, and local ocular irritation. In treating this habit, withdraw the drug gradually, and push the nourishment, giving strychnine and digitalis in the meantime. It is best to place the patient in a special hospital, except when the services of two skilled and faithful nurses can be obtained.

Carbolic Acid

This is a favorite poison, because of the knowledge which people feel they have of it. It has a local as well as general effect, and, when swallowed, produces burning pain in the mouth, throat, and stomach. It produces a white burn. It is rapidly absorbed, causing great muscular weakness and facial pallor; the skin is cold and moist, and, from the action of the drug on the nervous system, the patient soon lapses into unconsciousness. The pulse is rapid and weak, the breathing irregular, and the skin becomes blue. Death occurs from respiratory failure.

Treatment.—Diluted alcohol, from its solvent action on carbolic acid, has been used of late with the best results, care being taken to empty the stomach immediately afterward. Alcohol, by its solvent property, stops local action and absorption, and is, therefore, recommended for these cases. Stimulation with strychnine and artificial respiration may also be employed.

This concludes the somewhat dry, but, nevertheless, important subject of poisoning. It is the earnest wish of the writer of this article that every physician, possibly taking the above as a basis, may immediately and completely review his or her knowledge on the subject, obtaining thereby a crystallized method for future use—and who knows when that use may be of the utmost importance in the saving of that most precious of all earthly possessions—human life?



An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[Continued from page 841, April issue.]

Improved Galenic Medication

FRENCH chemical and pharmaceutical instruction acquired in Paris served me many helpful turns in my progressive struggles with the medication in the deadly tropical diseases. During my early years down here, I had the best French drugs, direct from the most remarkable manufacturing chemists of Paris; and I compounded and dispensed them myself.

In my fields of fearful deadly fevers and other pestilences that spread slowly from one big plantation to another, and one disease frequently following in the wake of another, the death rate was appalling, many patients being beyond the realm of hope when first seen, and that not occasionally, but in some parts all the year around. My medication and dosage were up to the recognized limits, yet, I had the humiliating pain to see poor sufferers die, whom, my presumptive intelligence admonished me, I should have saved. My faith and my patience in my academic attainments oozed from my fingers' ends. Then the supreme solicitude of my life became a sleepless purpose to save such patients and to modify the disease-conditions with which I was powerless to cope in those earlier days. Consequently, I resolved to abandon my anchorage to my costly and laborious education and to sink into deeper, darker ignorance or else to secure some measure of betterment in my management of these devastating maladies.

My conscience did not revolt at the resolve to resort to experimental practice upon patients positively predoomed to die under any system of treatment of which I was master.

Satisfied that my medication was shamefully inadequate, frequently not provoking even the slightest symptom of physiological action, I increased my dosage in a degree that under other circumstances would have inculpated me for criminal practice, and broke it up in fractions, giving these fractional doses with sufficient frequency for the whole of the increased dosage to be ingested in the authorized time of the legal rule as to dosage.

The results attained in this way were so surprising from the very inception that I

was emboldened fearlessly to venture further and further along the same lines of renegade—or improved, if you will—practice.

But I had not been long in that new forbidden practice when my legitimatized treasure of improved galenic remedies arrived from Paris, and at that point my medical career had its inception, as already stated by me.

It seems pathetically mournful that I know of but one member of all the fraternity whom I met during the civil war who still is (or was, not many months ago) among the living—he is Dr. William H. Burgess, of Avondale, Chattanooga, Tennessee; the same Doctor Burgess who has gained well-merited fame all over the world through his development of epsom-salt therapy, of which I shall have something nice to say later on. There was Dr. Frank Lawrence, who left The Medical Brief as a worthy legacy to the profession, and was one of the final three to leave me in the earthly pilgrimage. I do not recall at the moment whether he or my ever lamented friend Dr. Ben H. Brodnax fell by the wayside last, though my memory hints that Doctor Lawrence continued furthest on the journey.

I refer to Doctor Brodnax just now, because I desire to place next to the active-principle development of Burrgraeve, a discovery he made as a superlative element in improved galenic medication, the most important substance and compounds employed by me in my practice. Although the substance had already been long in use, it is true, the new applications of it in medicine were the discovery of Doctor Brodnax. I refer to carbolic acid—now called phenol.

Brodnax's Discovery—The New Phenol Therapy

Up to the time of this discovery of that friend of the rural South, and for some time subsequent, I had no idea nor bare dream of anything medical beyond my own distressful field down here in the jungles of tropical Mexico. I was neither planning nor thinking of communicating to the fraternity beyond the borders, and much less to the native profession, any feature of my work and experience among my patients. My

medications and my heart were amply absorbed with things present, that were urgent and pressing altogether beyond my power and capacity to meet the demands upon my attention. In other words, I had no time to write.

In those days, the American fraternity almost absolutely ignored, even burlesqued, the new active-principle therapy and practice. I had nothing to tell them that might not be met with a sneer. I had been but little in contact with the native profession here since my early yellow-fever and smallpox fiascos. There were no medical publications in existence, while I myself was then hardly known, at any distance from my accustomed tramping-ground; so that really there was little in common between the universal medical fraternity and my isolated work. On the other hand, the elegant profession of France and Belgium was well initiated in the active-principle practice; hence, there was nothing for me to say to those brethren.

The first I heard of Doctor Brodnax's discovery was through articles, appearing in my French medical journals, carrying the assertion that liquefied crystalline carbolic acid could be poured into cavities of the human anatomy without doing harm, the critics vehemently affirming that such a procedure would prove as deadly as electrocution; this novel treatment, which he credited to Doctor Brodnax, having been recommended by a prominent clinician of Philadelphia at a meeting of some American medical society. Knowing, as I did, the sterling character of Doctor Brodnax, I believed it impossible for him to have attempted to palm off a huge and perilous hoax on the medical profession of the world.

Not Bland Oil, But Strong Carbolic Acid Into Wounds

Within a few days after reading this item, one of the customary machete duels between drunken men took place, five of the men remaining on the field of honor well hashed up, three of whom were in great danger of death when they came under my view. I promptly placed a bottle of crystal carbolic acid in a vessel of water, and placed this over a fire until it liquefied. I then poured this warm liquid directly from the bottle into the deeper and most dangerous of the flesh gashes and swabbed the smaller cuts with a big feather, washing off any chance overflows with alcohol. I noted that the flow of blood was checked immediately.

Three of the men had a raging fever and

were moaning pitifully at the time this treatment began. Little time was required to go over them all. When I had finished the last one of the two least seriously hurt, I was astounded to find the most serious one, whom I had treated first, perfectly quiet and uttering no complaint. "By George! that fellow is dead," I soliloquized, in English, and hurriedly felt his pulse—and with more reluctant trepidation than I had ever felt before in that performance. But, lo, I found a regular pulse, no more feeble than the natural sequence to the loss of so much blood, and his fever gone. The same result quickly obtained with the others, the three more seriously hurt dropping into a quiet sleep.

As I quickly stitched the deep, gaping gashes, I saw that the blood and minute particles of injured flesh had been consumed and that the action of the acid on the blood-serum had formed an impervious albuminate over the healthy surface of the walls of the lesions. And there was evident not the shade of a symptom of absorption, which certainly would have fatally supervened from using the same quantities of the usual 5-percent aqueous solution poured into the cuts, as the pure phenol had been applied. The lesions all healed in a remarkably short time, without one drop of suppuration having formed.

At that time, I was using in my work a mixture of camphor and chloral hydrate for many classes of cutaneous troubles and old sores. I at once added an equal part of the crystal phenol, the camphor and chloral having been triturated to a homogeneous liquid. I at once discovered this compound to be much less severe, the burning sensation passing off in a few minutes, while the result was almost magical.

Then I went out of my way seeking new applications for it: toe itch, seven-year itch, ringworm, ulcers, and every old thing superficially barnacled on this much afflicted human anatomy. I successfully aborted boils and ulcers in the act of formation, and cured hemorrhoids by injecting the pure liquid phenol hypodermically, heating the syringe in water, to avoid the crystallization in the needle.

I wrote out a statement of my various experiments, stating that they had their inception in the French criticisms, and sent it to Doctor Brodnax (whose address was given in the French journals). Doctor Brodnax sent my paper to *The Medical Brief*, in which it was published, and then Doctor Brodnax ordered thousands of reprints mailed to mem-

bers of the profession who were not Brief subscribers.

The result, at this end, was that I was soon snowed under by letters from doctors, hundreds desiring to locate in practice down here, others asking a thousand and one questions about as many things; also, the editors of several medical journals requested items from this new field to them, while Doctor Lawrence himself also claimed some measure of my attention.

That Magic Phenol-Camphor Compound

In the course of time, I began to mix the compound with olive oil, 4 parts of the pure oil to 1 part of the compound; thus securing a useful preparation for catarrh, gonorrhea, sore or inflamed eyes; but I reduced the strength for women and children in proportion to conditions and age.

Now, for whatever disinfecting purpose, whenever a solution is employed in the human anatomy I dissolve the phenol in oil, in more than double the permissible strength in watery solution, and I have a permanent application that does not lose its strength nor dry up.

It would make a big bookful to mention

all the precious service I have had from phenol and its combinations. I have put the compound, properly reduced, into deep suppurating gunshot-wounds, through a soft rubber sound, and promptly had results that other known applications failed to attain, even in capable hands. I have applied the pure liquid phenol to bleeding wounds of federal soldiers and of rebels during the different revolutions that have scourged the country in recent times, and have had results equal to those in the machete gashes mentioned above—many deep wounds that healed quickly without any stain of suppuration. There were serious wounds not possible to attend to after the primary bloody dressing, because the intervention of the other hostile party prevented seeing them again; these men remaining without other attention for long periods, the poor fellows shifting from post to pillar, as it were, to escape the firing-squad; yet these wounds finally healed under their bloody bandages, with my compound in. I do not believe any other hightoned ethical substance known and used by the aristocratic profession can nearly approximate such showing.

[To be continued.]

Vaccine- and Serum-Therapy in Everyday Practice

V. Infections of the Skin and Subcutaneous Tissues

By W. C. WOLVERTON, M. D., Linton, North Dakota

EARLY in this series of papers on bacterin- and serum-therapy, we endeavored to state plainly that this line of treatment is not meant for a cureall and that it is not our intention to exploit biological therapy, to the exclusion of time-tried medicinal remedies; but, rather, that bacterial therapy attains its most brilliant results when practiced in conjunction with the indicated active principles of drug-remedies. Therefore, as we take up each individual infectious process, we shall give not only the biological treatment, but also the collateral remedial measures, in the way of drugs and chemicals.

In order to simplify the subject as much as possible, we have not heretofore considered the specific bacteriology of individual infectious processes, believing that it were better to consider the bacteriology and treatment of each condition together, as we shall take them up one by one.

In general, we may say that the great majority of infections affecting the skin and underlying tissues are due to invasion by the "pyogenic (pus-forming) group," consisting essentially of the streptococcus pyogenes, and the staphylococcus aureus, albus, and citreus. Other organisms concerned in infections of the tissues just referred to are the pneumococcus, bacillus pyocyaneus, bacillus of tuberculosis, colon-bacillus, acne-bacillus, and, occasionally, the rarer bacteria, such as the bacillus mallei (of glanders), typhoid-bacillus, streptothrix actinomycosis, and so on.

Of the foregoing pathogenic bacteria, the streptococci and staphylococci are usually the primary invaders; later, once these malefactors have paved the way, other germs may effect a secondary invasion of the tissues; in fact, the secondary invaders may in time greatly outnumber the primary. Treat-

ment directed at the variety or varieties of bacteria concerned in the secondary infection will usually effect a considerable improvement in the conditions present; but it is evident that such treatment will not reach the underlying, or primary, infection. In such cases, a combined bacterin, containing all or at least a majority of the varieties of microorganisms responsible for the pathologic condition, is indicated.

Probably the simplest order to follow in taking up the various conditions about to be considered is the alphabetical one, and this we shall adopt.

Abscesses

Acute abscesses are almost always caused by the pyogenic cocci, but may be due to other organisms. Usually, in a given abscess, a pure culture of one specific bacterium will be found present. In *chronic* abscesses, however, two or more distinct varieties of bacteria are quite likely to be found existing conjointly. Chronic abscesses are commonly due to the bacillus of tuberculosis. Occasionally the streptothrix actinomycosis may be met with.

Ofttimes an abscess is only the local manifestation of an underlying systemic infection. For example, multiple pyemic abscesses may result from puerperal sepsis, typhoid fever, osteomyelitis, appendicitis, pneumonia, and so on. In such cases, due regard must be paid to the underlying trouble.

Naturally, wherever an abscess is so situated that it can be safely reached, evacuation of the purulent contents and subsequent drainage must be secured.

In *chronic* abscesses, where there is a thick wall of coagulated lymph and fibrin, constituting a "pyogenic membrane," which is impervious to the antibody-bearing blood-serum and lymph, the walls of the abscess should be carefully curetted, to remove the necrotic material. The cavity is then to be lightly packed with gauze saturated with Wright's citrate solution (see article III). Citric acid, in doses of 1-2 to 1 dram three times a day, administered by mouth, is indicated, in such cases, to reduce the coagulability of the serum and lymph.

In some cases, the contents of a small abscess may be removed by means of aspiration, the transudation of antibody-laden serum being thereby facilitated and recovery hastened. I recently removed, by means of a small (2 Cc.) Luer syringe, the contents of a suppurating lymph-node in the neck of an infant; this treatment was supplemented

by the injection, into the gluteal region, of a dose of a bacterin containing streptococci, staphylococci, and pneumococci. Complete recovery ensued, without the necessity of lancing the abscess; scarring was thus obviated; nor was the infection diffused throughout the surrounding loose cellular tissue of the neck, which might have happened had lancing been resorted to.

No thinking man now employs strong chemical antiseptic solutions in the treatment of infections, except in rare instances (anthrax, tetanus, and so on), where it is desired to destroy infected tissues *en masse*. Strong chemical antiseptics cause coagulation of albumin of the serum and tissues and thus favor rather than hinder the growth of bacteria. Hypertonic salt-solution and Wright's citrate solution have a much more logical and favorable action, producing as they do, a copious outpouring of serum, bringing with it fresh antibodies, and washing away bacteria, toxins, dead leukocytes, and cellular detritus. In many cases, the mere existence of an abscess is indicative of a condition of lowered systemic resistance, which underlying condition may be due to intestinal autotoxemia, or to a focus of chronic infection elsewhere (pyorrhea, chronic tonsillar infection), with constant absorption of toxic products of bacterial activities. When such conditions exist, attention must, of course, be directed to their removal.

Bacterin Therapy of Abscesses

As a general rule, smaller doses of bacterin are required in acute than in chronic conditions, for reasons before stated; namely, that, in chronic cases of infection, a mutual tolerance has been established between the tissue-cells and leukocytes, on one side, and the invading bacteria on the other; hence, in chronic cases, a larger dose of bacterin is usually required to evoke an immunizing response.

Where the infection is due to a single variety of microorganism (as may often be demonstrated by the microscopic examination of a stained coverglass spread of the discharge), then a polyvalent stock bacterin containing only the corresponding variety of killed bacterium is indicated. But, when the bacterial diagnosis is not perfectly clear and self-evident, then a *combined* bacterin, containing all the various pathogenic germs liable to be involved in an infection of that particular region of the body, should be resorted to.

The average initial adult dose, in acute

cases, of the streptococcus is 25 to 30 millions; pneumococcus, the same; staphylococcus, about 100 millions. In chronic cases, the doses of the various germs should be about double those employed in acute infections.

In acute cases, the dose, increased by 50 to 100 percent, is to be repeated in from one to three days. Should any evidence of a harmful negative phase be evident, after the first or any succeeding inoculation, it would indicate that the dose was too large. Then one must wait until the negative phase has passed and the positive phase supervenes, when a somewhat smaller dose should be resorted to. In chronic cases, larger doses are employed, and at correspondingly longer intervals, of say, from four to ten days.

In chronic abscesses, due primarily to the tubercle bacillus but complicated by the pyogenic cocci, large doses of the strepto-staphylococci bacterin will be necessary to overcome the secondary infection; while some form of tubercle-bacterin or tuberculin will be required to cure the primary process. As I have before stated, I have had but a limited experience with tuberculins as therapeutic agents; hence, I can do no better than to quote Allen ("Vaccine Therapy and Opsonic Treatment," 4th Edit., p. 138), who considers the bacillen-emulsion the most suitable preparation, and gives the initial dose as 0.00001 Gram. The initial dose, he says, should not be increased so long as the immunizing response, as judged by the clinical condition, is a satisfactory one; when increase is necessary, this may be made gradually.

When a chronic abscess has at length been overcome and cured, it is well to administer occasional doses of bacterin, at say, monthly intervals, in large dosage (1 or 2 billion killed pyogenic cocci), to maintain the resistance of the tissues at as high a level as possible, and thus guard against recurrence of the infection. These periodic inoculations should be kept up until it appears that all danger of recurrence is past.

Medicinal Measures in the Treatment of Abscesses

In the treatment of acute abscesses, I would place calcium sulphide as the most powerful synergist, in conjunction with bacterins. This remedy I have employed for more than ten years, and my faith in its efficacy is unshaken. But, to get the best results from it, one must employ it in sufficient dosage. This means that it should be administered in doses of from 1-2 to 1 grain, repeated every hour or two hours, until the

wellknown odor of hydrogen sulphide is distinctly noticeable on the breath of the patient, then the interval may be lengthened to, say three hours.

Strychnine, to "take up the slack," is indicated in many cases of abscess. Where the streptococcus is implicated, there is usually more or less hemolysis, with consequent anemia. Then some form of iron should be used. A very efficient combination is the well-known triple arsenates (iron, quinine, and strychnine) combination.

In chronic abscesses, the iodide of iron is indicated; as is also cod liver-oil, in an emulsion freshly prepared with egg (both the albumen and the yolk), and flavored with methyl salicylate.

Acne

My experience with acne, that notoriously intractable condition, has been that excellent results can be obtained from bacterin-treatment, associated with proper hygienic and medicinal measures; provided the physician can secure the honest cooperation of the patient. Any failure, I believe, will be owing to carelessness on the part of the patient and his failure to understand the utter necessity of patiently following systematic painstaking treatment until such time as a cure has been effected, and then guarding against relapses.

As to the etiology of the various infectious conditions grouped under the designation acne, we may state that the acne-bacillus is present in virtually every case, while the staphylococcus albus is to be found as a complicating causative factor in at least one-half of the cases. Rarely the staphylococcus aureus or the streptococcus may be concerned. Accordingly, stock bacterins intended for the treatment of acne contain, usually, a combination of acne-bacillus and staphylococcus albus, in proper proportion. Polyvalency of both varieties of bacteria is an essential here, as much, or more so, than in the treatment of other infections.

The initial dosage of the acne-bacterin is about 5 million acne-bacilli and 100 million staphylococci. The dose must be gradually increased, as determined by the clinical symptoms. The proper interval between doses is about a week.

Hygienic, Dietetic, and Medicinal Treatment

In the cases just considered, a blood-count often will show the existence of anemia, and the triple arsenates of iron, quinine, and strychnine will be of benefit.

A combination I have employed with

advantage in a good many cases of acne is one containing calcium sulphide, echinacea, nux vomica, berberine, arsenic sulphide, and irisoid. The indications for the various ingredients of this combination are self-evident.

Unless you are sure that the bowels are doing their full duty, a saline laxative should be taken, immediately upon arising, every morning, in sufficient dosage to produce a free evacuation. A dose of calomel, once or twice a week, is also of value. Vegetable purgative drugs are mentioned only to be condemned. In obstinate cases, enemata must be resorted to, until the condition is gotten well in hand, when calomel and salines may be trusted to keep up the good work.

The free drinking of *pure* water is to be encouraged, since that aids elimination of toxic materials through all avenues of excretion.

A light, nutritious, easily digestible diet is imperative. These patients must avoid food cooked in the frying-pan. A vegetarian diet, supplemented with milk, is best.

Where intestinal putrefaction persists, de-

spite the efforts directed at elimination, the administration of a living culture of the bacillus bulgaricus, obtained from a reliable laboratory, is indicated.

All comedones must be expressed and pustules lanced, in order to determine the flow of antibodies to the infected foci. For a like reason, steaming the face with a bath-towel wrung from hot water, continued for fifteen minutes or so, every evening, is a measure of great value. This should be accompanied by gentle massage of the affected tissues.

The free use of warm soft water and pure, unirritating soap, for frequent bathing, must be insisted upon.

If there is a coexistent seborrhea of the scalp, a weekly shampoo should be taken, using a *pure* tar soap. This is essential, in order to obviate the possibility of reinfection from this source.

Above all, these acne patients must be encouraged to be faithful and persistent in their efforts at cooperation with the physician. Bacterin-treatment will go a long way toward effecting a cure, but will not do it alone.

The Principles of Therapeutic Immunization

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THE object of this paper is, to reiterate some of the essential details absolutely necessary to success in the use of bacterins. I have, in a measure, attempted to bring out the essential procedures usually neglected by the general practitioner and those that generally result in failure, because my experience has been that most of the patients referred to me by the general practitioner have rapidly improved as a result of careful attention to the necessary details.

The exact value and the limitation of bacterins are far from being clearly defined, notwithstanding the excellent results obtained by experts and the frequent marvelous cures reported by general practitioners.

Even those of us who specialize in therapeutic immunization occasionally fail to obtain the desired and expected result; but such failures are due, I believe, to improper application of the method of immunization. The method itself undoubtedly is efficient.

I firmly believe that localized bacterial infectious diseases can be cured, in practically every instance, by means of therapeutic immunization, provided the patient is not

suffering from some generalized metabolic derangement sufficiently severe that it cannot at least be held in abeyance by surgical or general medicinal treatment, at any rate to such an extent as to allow the patient's tissue-cells to react to the stimulus of bacterins.

Essential Factors in Bacterin-Therapy

Aside from the necessary proper medical and surgical attention, which many times constitutes half the battle, therapeutic immunization, to be successful, depends upon two factors, namely: employment of a proper vaccine, either autogenous or stock, correctly prepared and properly administered; and the insuring of a sufficient flow of lymph through the infected tissues.

Often the proper bacterin is not being employed. The average general practitioner uses one of the combined bacterins and, unfortunately, but rarely has a bacteriologic diagnosis made. In all probability, more physicians than ordinarily believed, use the Van Cott combined, the gonococcus combined, pneumococcus combined, and staphylo-

acne bacterins, to the absolute exclusion of the single bacterin. If we are to judge by the results they obtain in the majority of cases, this procedure, while not ultrascientific, is eminently practical, and, so far as I am able to ascertain, entirely harmless.

Except in the very commonest of infections, the diagnosis of the exact nature of the infection is beyond the average practitioner, calling for, as it does, expert bacteriologic knowledge, technic, and adequate facilities. But, as we are coming more and more to a realization of the possibility of transmutation of the organisms in the same group, and, owing to our limited knowledge and as yet crude methods of differentiation, the impossibility for even an expert, the exact diagnosis may be of questionable value. It is well known that concentrated sera will agglutinate various allied organisms, even though they have been produced by the immunization of other members or of a single member of a group.

A highly potent immune-serum that is specific for the gonococcus in a high dilution will, in a concentrated form, react also with the micrococcus catarrhalis and the meningococcus, organisms that we take to be distinct bacteriologically and certainly entirely distinct so far as the pathologic conditions they cause clinically are concerned, yet, belonging to a somewhat morphologically and tinctorially similar group. The interrelations of pneumococci and streptococci along similar lines are now well understood.

It is possible to conceive, therefore, that the immunization produced by one strain of streptococcus, while highly efficient against that particular strain, may also have an effect in the blood stream just sufficient to turn the balance in favor of recovery from an infection caused by an entirely different strain. However, it stands to reason, as a result of all our knowledge of immunity, that the use of an identical organism will give the best results.

Many failures are the result of the use of improper bacterins. We are inclined, usually, to consider all furuncles and ulcerations resulting therefrom as caused by staphylococci. Careful microscopic and cultural examination, however, have shown me that, when these staphylococcus bacterins fail, frequently a micrococcus catarrhalis, a colanbacillus, streptococcus or a bacillus pyocyanus is causing the infection; and, naturally, we should expect staphylococcus bacterins to fail.

In the preparation of an autogenous bacterin, occasionally the isolation of the causative

organism is a difficult matter, especially in the case of influenza, gonococcus, and tubercle-bacillus infections. In the usual open infection, the diagnosis and isolation of the organism are comparatively simple. Occasionally we find, however, that most careful cultural methods are necessary, as frequently in chronic cases in which there is a profuse discharge the organisms are too few to be demonstrated microscopically; or the causative organism, as a streptococcus, may be entirely overshadowed by the enormous number of secondary invaders, such as colanbacilli, and so on.

In closed infections, the proposition often apparently is impossible, there being no definite localized lesion available. However, in these cases, it is well to remember the possibility of focal infections, including the mouth cavity, the respiratory tract and its accessory sinuses, the auditory canal, and, in the male, especially the prostate gland. In every case, blood cultures should be made repeatedly.

A highly important fact, that is not as yet a matter of sufficient knowledge on the part of the general practitioner, is, the elimination of bacteria by the kidneys. A careful examination will usually reveal the causative organism in many cases in the urine. I have repeatedly massaged a chronic rheumatic joint and obtained the causative streptococcus from the urine, after repeated joint puncture had failed.

A single examination of the discharge from diseased tissues unfortunately is too commonly all that the average practitioner deems necessary. Many cases apparently improve as a result of bacterination for a time and then remain stationary despite increased dosage, and so on, and the physician is at a loss as to what to do. These are cases of additional infection, or some secondary infection has existed from the onset, but was not recognized and now is in the ascendancy. Especially is this true of respiratory and urinary infections. Very frequently we have a new variety of infection manifesting itself during or immediately following bacterination for the original infection. A great many errors also result from the improper collection of material for examination and diagnosis.

The preparation of an autogenous bacterin does not concern the general practitioner. However, it is essential that it be properly prepared as to isolation of organisms, determination of their number, proper killing, and thorough testing in order to determine that they have been killed and that there are no

extraneous organisms present, especially tetanus-bacilli, or their spores.

The ordinary method of testing, by inoculating the surface of an agar-slant with some of the vaccine and incubating for twenty-four hours, is mentioned only to be absolutely condemned as being of no value and highly misleading. A suitable portion of the vaccine, from 5 to 20 minims, if a preservative has been added, should be inoculated into freshly prepared 1-percent glucose-veal bouillon in a 50-Cc. Smith fermentation-tube and incubated not less than seventy-two hours, preferably seven days.

How to Give Vaccines, and the Dosage

The administration of a vaccine, so far as the patient is concerned, usually does not receive sufficient consideration on the part of the physician. Personally, I inoculate through an area of the skin that has been painted some three minutes previously with tincture of iodine. I use a Luer all-glass syringe, with a very sharp platinum-iridium needle, 27-gauge, 1-2 inch in length. The skin is pinched up between the fingers, with firm pressure, then the needle is inserted with a rapid plunge; after which the bacterin is slowly injected. The only sensation the patient has, as a result of this procedure, is a slight burning lasting for probably thirty seconds. The insertion of the needle usually is not noticed.

The dose of the vaccine necessarily varies greatly. The first dose rarely ever is too small; rather, frequently too large.

In general, the dose should vary inversely as the severity of the invasion and the extent of the lesion, and it must also necessarily depend upon the general power of resistance of the patient. We aim to obtain a maximum immunizing response with a minimum of toxic effect. Even severe local reactions are to be avoided.

The clinical condition of the patient is the most practical and ample guide. The determination of the opsonic index may well be dispensed with; it is impractical, time-consuming, expensive, and misleading. The patient's general condition, pulse, temperature, and other clinical symptoms, especially the aspect of the localized lesion, as regards pain, discharge, and so on, are the surest guide.

Always begin with a small dose. Repeat this as soon as improvement begins to wane, although repeated small doses are not the most efficient. Never increase the dose until definite evidence that the previous dose

did not produce an improvement demonstrates that it was too small.

If the clinical symptoms, that is, the focal reaction, produced by a dose, last several days, that dose was too large, and the next one should be the same or even smaller. If improvement does not follow or is of short duration, the dose is too small. Only in acute infections, and then usually for not more than three or four doses, is it advisable to give a very small dose every twenty-four hours.

The Bacterin Must be Supplemented by Other Measures

The average practitioner unfortunately considers that when he has injected the bacterin he has done his full duty. But this is far removed from the truth. Provided the proper bacterin is selected and the patient's cells react by producing antibodies, the essential has not yet occurred. It is absolutely necessary that serum or lymph, highly charged with antibodies, have access and flow freely through the lesion. This is much neglected, and, yet, is nature's method of eventually destroying the infection.

Every inflamed area, whether it show the typical clinical signs of acute inflammation or not, is congested, tumefaction is present, and the circulation, because of the pressure, is practically nil. Therefore, in every case, if possible, local applications of a solution containing 1-2 percent of sodium citrate and 4 percent of sodium chloride is the ideal treatment. If the blood coagulates rapidly—as it does in many infectious diseases—the injection of 60 grains of citric acid every three hours, for four doses, is absolutely necessary; and this alone will often yield wonderful results. In addition, owing to the unquestionably valuable clinical results that we have obtained with nuclein—which is capable of doubling or trebling the leukocyte-count—we now give this as a routine procedure, either hypodermically (although it is somewhat painful this way) or in large doses by month.

We have entirely quit the use of antisepsics. In order that they may penetrate and kill the bacteria, they must be strong enough also to kill the cells and the leukocytes, and then they would also destroy the immune-bodies in the serum. Therefore, we now rely entirely upon wet-packs of sodium-citrate and sodium chloride.

The dosage of bacterins, as usually recommended by most practitioners is considered too small. However, we advise that not to

exceed 100 million staphylococci or 50 million pneumococci (in pneumonia, 25 million), or 100 million colon bacilli, or 50 million streptococci (preferably one half to three-fourths of this amount) be given as the first dose. You will then avoid a severe local, focal, and general reaction, which, if either should occur as a result of the first dose is

very liable to induce your patient to object to continuing the treatment. *Aer.* bacilli and diphtheroid organisms should never be given in doses greater than 10 million. These two organisms are particularly prone, in larger doses, to produce local reaction at the site of inoculation.

To be continued

What the General Practitioner Can Do in the Treatment of Chronic Diseases

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[Continued from page 418, May issue.]

Mechanotherapy

In this chapter I shall discuss various forms of exercise, more particularly passive, as embraced under the general heading of mechanotherapy. I shall give the physiological action of the various methods employed, which will enable the physician to judge what form is best adapted to any particular ailment. When I come to take up the various diseases, I will then go into the matter of mechanotherapy, or exercise for remedial purposes, in detail.

Between the function of an individual organ or structure and the physiological capacity of the whole organism, there is a double connection, namely, that of the sympathetic control through the nervous system, and the nutritional influence through the circulation of the blood. These two forms of connection again are closely related to and dependent upon each other, for the reason that nutrition, through the blood circulation, is controlled by the so-called vaso-motor nerves—which are parts of the sympathetic nervous system—and the action of all nerve-tissues is dependent upon its own nutrition through the quantity and quality of the blood current.

The practical significance of all this is, that, if we wish to raise the functional power of any part, we must increase its blood supply; to stimulate the circulation or nutrition of a part, we must raise its functional capacity; to increase the circulation in and the capacity of a structure, is to intensify its metabolism; when oxidation increases, the regeneration of tissues and fluids becomes more rapid. As a necessary result, the lymphatics and ab-

sorbents do more work, and thus elimination of waste becomes more active and copious.

There are in vogue seven or eight mechanotherapeutic methods that are subject to these physiological conditions and processes, and these I shall consider under their proper heads, starting with the simplest forms and concluding with those which demand a more or less elaborate equipment and a corresponding degree of experience and skill in employing them.

The Various Forms of Mechanotherapeutic Measures

A *manual* mechanotherapeutic method involves in its application the use of the hand; it is *instrumental* when machinery or instruments are brought into service.

Swedish movements are twofold in kind. Any ordinary exercise of the organism, such as walking, riding, swimming, and other athletic sports, is a hygienic measure merely, not therapeutic; it preserves health. When the exercise is systematized and pursued according to a regular plan, for a definite purpose, it becomes therapeutic, rather restoring health than merely preserving it.

From the standpoint of therapy, any special form of exercise is called *kinesitherapy* (movement-cure, Swedish movements). The term "Swedish movements" refers to the country or people in or among which kinesitherapy has been most in vogue.

A Swedish movement is any form of bodily exercise having a fixed duration, direction, and purpose. The duration is limited by the tolerance of the involved part, the endurance of the patient and the character of the effect desired; the direction is indicated by the anatomical parts which are to share in the

effects; the purpose is contained in the diagnosis of the particular case. This should be thoroughly clear in the mind of the operator before any movements are begun.

There are two general varieties of Swedish movements:

1. *Active movements*, or movements that are performed by the patient through his own will and effort, without either help or interference. For example, if he bends his arm, in order to contract his biceps muscle, according to instruction from the operator, that constitutes an active movement. This form may be made to involve one or any number of the voluntary muscles, for producing some definite effect.

2. *Passive movements* may involve any number of muscles without any effort on the part of the patient, as, when the operator bends the arm of the subject, the latter neither aiding nor resisting.

The character both of active and passive movements may be changed by the kind (and amount) of labor involved in performing them. When the operator bends the patient's arm, the patient remaining passive, the effect will be very slight; but, if the patient, instructed to resist, brings the muscles into play by holding his arm rigidly extended, it is evident that the effort of bending will be greatly increased.

This principle of resistance leads to a classification of the various active and passive movements, as follows:

1. *Concentric movements*, which are those involved when the subject, in using certain muscles, resists the endeavor of the operator to prevent those movements.

2. *Excentric (eccentric) movements*, which are those involved when the subject resists the endeavor of the operator to produce certain movements.

Flexion, extension, and rotation are the terms applied respectively, to bending, straightening, and turning of any part.

A variation of the concentric movements may be made by causing the patient, lying flat on his back, to attempt to raise his legs without flexing the knees, while the operator opposes the movement. This, of course, would increase the intensity of the effort, with a corresponding degree of benefit derived. Other modes would consist in the patient's standing erect and then gradually bending forward without bending his knees, or he may pull himself up slowly on a horizontal bar, or perform some such exercise. The abdominal muscles would be very active in all these movements, the intraabdominal

circulation would be stimulated, venous congestion counteracted, and metabolism corrected and intensified.

The *physiological effect* produced may be stated as follows: In exercises of this kind, labor is necessary; labor incites a greater consumption of food-elements in the parts involved; metabolism becomes stronger and more rapid; there is increased production of body-heat in the active region, with a correspondingly greater amount of waste material. Exaggerated exercise, therefore, means exaggeration of all the physiological powers of organic function. In consequence, there will result increased and better nutrition; the structure will improve in quantity and quality; there will occur physiological hypertrophy, and, accordingly, greater functional power; the part will hold more blood; the blood will circulate more vigorously; venous congestion and the local autotoxic condition thereby induced will be counteracted, so that the part will become stronger, larger, more active, and more healthy.

The varieties of the Swedish movements adapted to the indications of clinical conditions are practically endless. They may involve the entire body or merely a finger or a toe. We may flex, rotate or extend, with or without resistance, the hand, arm, shoulder, foot, leg, hip, and so on, and resolve these movements into any number of subvarieties, according to any particular need. We may treat the chest, the head, the neck, the back. We may, by compressing with the flat hand one part of the chest-wall, induce fuller respiration in the other parts. The elaboration of the methods is limited only by the ingenuity and skill of the operator, in whom physiological knowledge, diagnostic judgment, and individualizing power are prerequisite qualifications for complete success. However, the full value of kinesitherapy does not become apparent, perhaps, until it is combined with other mechanotherapeutic means, especially massage.

Massage

The term massage is applied to the kneading of the soft tissues of the body according to a certain defined system. As massage may be performed by hand or by means of special apparatus, it naturally falls into two classes—manual and instrumental.

Without doubt, massage is the most venerable of all therapeutic measures, bound up, as it is, in the very instincts of the animal (human as well as brute) organism. A person who receives a sudden blow, bruise or almost

any kind of injury of his body instinctively rubs, squeezes, strokes or holds the part; while animals will lick their wounds or rub a hurt. This is massage in its rudimentary forms.

Although "handwork" is implied in the word "manipulation," this term is technically applied to all mechanical methods of treatment that affect the size or shape of any area of the body, whether by stroking, rubbing, squeezing, striking, and so on, and whether administered by hand or instrument. Manipulation, therefore, is the primary element of massage. To press the hand on a part of the body-surface, causes the latter to yield and undergo a change in size or shape, or both, the nature and duration of the change depending on the duration and force of the pressure. A mere quick slapping or striking produces alteration of the area as truly as does a long and forceful contact.

Vibration and Osteopathy

From the foregoing explanation, it becomes evident that "vibration," which at present is so popular a physiotherapeutic method, is merely a subvariety of massage, and by no means a system in itself. Under the double head of massage and Swedish movements there are included all the osteopathic manipulations; and the efforts to establish Osteopathy as a special system, as differing from massage and Swedish movements, and larger than both of the two combined, are futile.

There is nothing in Osteopathy that has not been borrowed from kinesitherapy and massage or can not be explained by spondylotherapy.

Vibratory stimulation, as advertised by certain enterprising manufacturers, has been given us by the substitution of an electric vibrator for the Osteopath's hand; and this mode, though having less claim than has Osteopathy to being a therapeutic specialty, forces vibration from its proper therapeutic position. It is neither more nor less than a form of the ages-old massage.

As to the *physiological effects*, I have already mentioned some of the physiological prin-

ciples involved in the therapeutic uses of mechanical methods, and several of these are included in the subject of the physiological effects of massage, as:

Contact: As has been already pointed out, the contact of the operator's hand or finger with the patient's body, without pressure, gives the simplest form of stimulation, and this contact produces a threefold physiological action: (1) It influences the temperature of the two surfaces, which is its thermic effect; (2) it stimulates the cutaneous nerves and induces an agitation in the interneuritic dendrites, its electrical effect; and, (3) it starts that vague motion which is supposed to be a radiation of the subtle, undefined power, *animal magnetism*, and which I will call the magnetic action of contact.

Pressure: This is contact magnified or accentuated and contains all the physiological action of contact, to which are added certain definite physical effects. The soft parts, including the blood-vessels, are compressed, and a state of relative anemia is induced; the diminution of blood being proportionate to the degree, extent and duration of the pressure. With the removal of the pressure, the circulation becomes regenerated. The blood rushes back not only with greater vigor, but because it brings with it fresh arterial blood from the deeper vessels, with improved quality. All contractile tissue, including the muscular, is affected by pressure, which, in its general action, is equivalent to the passive movement before mentioned. The lymphatics become more active, primarily in response to the manipulation, secondarily in response to the regenerated blood supply; and the nerves are influenced in the same manner.

Pressure may be varied in kind. It may be exerted downward or obliquely; it may be of long or short duration—a smart slapping or a uniform and continuous movement, as in stroking or effleurage. In short, it would be difficult to name a limit to the number of directions and ways in which it may be applied.

[To be continued]



What Others are Doing

ATROPINE FOR SPASM OF THE PYLORUS

In two instances, excellent results were witnessed by K. Ochsnerius (*Deut. Med. Woch.*, 1915, No. 51) in combating pyloric spasm; however, the dosage should be, in accord with Stoltes, considerably larger than ordinarily is prescribed. Thus, in his first case, the author gave 3 drops of a 0.01 : 10 solution (0.15 mg. of atropine sulphate), repeated six times. The other case was that of an infant of six weeks, and this got as many, even, as 8 such doses, or, 1.2 mg. in a day. The medication was well borne under the circumstances. It is advisable to give a dose of the remedy, not alone just before feeding, but also during and after the nursing.

THE STEISS PROCEDURE IN PLACENTA PRAEVIA

That the Steiss procedure in the management of placenta prævia is highly satisfactory, is the judgment of P. Baum, of Breslau (*Zentralbl. f. Gyn.*, 1915, No. 50); his experience being that under it double the number of living children were born than when resort was had to the metreurynter. This is his method:

Just as soon as action is demanded and when the os has dilated sufficiently (so that, say, two fingers may be passed), external version is performed, the sac is ruptured, and then one foot of the child is drawn down into the vagina; after which, further developments are to be left as much as possible to nature, only checking any occasional oozing of blood by pulling at the foot and thus tightening the plug. Only when the os is too small or when external version cannot be accomplished (which is rare), should the metreurynter, or, inflated bag, be introduced.

DYSPNEA CAUSED BY ACID INTOXICATION IN CHILDREN

A peculiar form of dyspnea is described by John Lovett Morse in *The Boston Medical and Surgical Journal* for April 20 (p. 570), as a

symptom of an acid intoxication of infancy and childhood.

This form of dyspnea is associated with the presence of considerable quantities of acetone bodies in the urine. There is no cyanosis, and it is peculiar in the fact that the rate of respiration is increased while both inspiration and expiration are prolonged, the normal relation between the two being preserved. In this acid intoxication, the quantity of urine is reduced, while complete anuria is not uncommon. Vomiting is very common and diarrhea frequently occurs, although constipation is not infrequent. The breath may have a peculiar aromatic odor. The cheeks are flushed and the lips of a peculiar cherry-red color.

When these symptoms are present, the desirability of making an examination of the urine is evident. Alkaline treatment would, naturally, be indicated. The association of alkalis with intestinal antiseptics, as in a preparation such as sodoxylin, will give best results.

A CASE OF SOLANINED POISONING, WITH RED VISION

In August last, a vigorous girl of not quite 9 years ate about a dozen of the ripe scarlet berries of solanum dulcamara, commonly known as bittersweet, and soon became seriously sick. This being in the war-zone, the only aid available was Dr. S. Hilbert, staff-surgeon of a nearby regiment, who, obviously, was not provided either with a stomach-pump or the physiologic antidotes. His report (*Muench. Med. Woch.*, 1915, p. 1785) is of special interest, inasmuch as he mentions the fact that during the toxic stage the victim's vision was affected in such a way that (aside from the temporary iridoplegia) everything looked scarlet to her, "just like the berries"; although, as the author points out, this symptom of seeing red has repeatedly been observed in poisoning by other solanaceous alkaloids (such as atropine, duboisine) as shown, for instance, by Doctor Hilbert himself in his "*Pathologie des Farbensinnes*" (Halle, 1897).

Free vomiting was established by homely means, until all vestiges of the berries were removed, then a little cold milk was given to drink (for the gastric irritation), and the girl was well again next day, barring some still disturbed accommodation, lack of appetite, lassitude, and pallor; the red vision had disappeared, and in five days she was in normal health. Spontaneous purging also had aided in carrying out the poisonous substance. Although the symptoms had been severe, this rapid recovery under such simple treatment must be ascribed to the early and complete removal of the offending berries.

Briefly, the symptoms exhibited were: vomiting (later purging—but both aided by copious drafts of warm water), gastric pain, headache, dizziness, cardiac palpitation, anguish, flushed face, dry skin, pulse rate of 120, and occasional intermission of pulse-beat; besides the visual disturbances. The heart-sounds were pure and clear.

For the sake of completeness, and, as a mind-refresher, we may repeat here the author's enumeration of the principal allied solanaceous alkaloids, all of which are closely alike in their physiologic and toxicologic action; namely: atropine, from *atropa belladonna* and *nicandra physaloides*; scopolamine [*hyoscine*], from *scopolia atropoides* and *hyoscyamus niger*; duboisine, from *duboisia myoporoides*; hyoscyamine, from *hyoscyamus niger*; daturine, from *datura stramonium*. This list does not take account of the many minor principles present in the plants named and still other species of the same family of mydriatic plants nor of those allied principles formed as the result of chemical changes during extractive manipulation. Of course, there must be added solanine, from *solanum dulcamara*—the one under consideration. Other constituents of this latter plant are, dulcamarin and sugar.

STROPHANTHIN, STROPHENA, AND DIGITALIN

The intravenous administration of strophantin has this great advantage over digitalis medication, that the influence upon the heart is secured very much sooner, only, unfortunately, declares G. Modrakowski (*Korr.-Bl. f. Schweiz. Aerzte*), this principle can not be administered subcutaneously or intramuscularly, because of the marked local irritation caused by it. In order to overcome this latter objection, a Swiss firm has perfected a dialyzate of the fluid extract of strophanthus (on the principle of the digitalis dialyzates)

and is marketing this under the trade name of strophena. Modrakowski affirms having found this new preparation eminently satisfactory and free from the objectionable action indicated, while, introduced intramuscularly, producing free diuresis within a few hours.

Quoting the foregoing Doctor Traugott, of Frankfurt a. M. (*Ther. Monatsh.*, 1915, p 402), opposes the author's position; for, at least, g-strophanthin and strophanthin-Boehringer are classed among the nonirritating digitalis-preparations (Holste: *Ther. Monatsh.*, 1914), while Loeb and Loewe have informed him that they have found the irritating properties of the latter negligible in comparison with those of the digitalis preparations now so largely introduced intramuscularly.

THE TYPHOID-FEVER CARRIERS

Medical investigators are still looking for some dependable remedy capable of ridding the intestinal tracts, of those infested, of that objectionable and dangerous organism, the bacillus typhosus. In a paper published in *The Lancet* for March 11 (p. 566), Doctors Stokes and Clark present records of an experimental study of some 800 convalescents from typhoid fever.

According to these statistics, 4 percent were temporary carriers, with the germs located in the intestinal tract, and 4 percent were temporary carriers, with the germs in the urinary tract, while 1.6 percent were chronic intestinal carriers and 0.21 percent were chronic urinary carriers. It is shown again that females are more frequently chronic carriers than are males, the incidence of female chronic carriers being nearly three times that of the males.

Various methods of treatment were tried, with a view to ridding these carriers of the Eberth bacillus. For instance, salvarsan injections were tried in 2 cases, but did not alter the condition in the least; both patients continued to excrete the germ by the stool for some time afterward.

Of the temporary urinary carriers, only two of the 33 found became chronic carriers. These 33 were given urotropin (hexamethylenamine) for about ten days, and then after an interval of about one week they were again examined. In all, the tests, without exception, proved negative on four consecutive examinations. The two patients who excreted bacilli after the twelfth week from the beginning of the illness had both suffered relapses in a late period of convalescence.

Both these patients were benefited by the urotropin course.

HYPERTHYROIDISM RELIEVED BY QUININE-AND-UREA INJECTIONS

The symptoms accompanying exophthalmic or toxic goiter are too well known to require description. These symptoms are due, presumably, to an excess of thyroid secretions, or, as it is also known, to "hyperthyroidism." Accordingly, Leigh F. Watson (*N. Y. Med. Jour.*, April 22, p. 791) states that the symptoms can be relieved by injections of a concentrated solution of quinine and urea hydrochloride. It is to be understood, of course, that this does not remove the goiter itself—merely, in part, the symptoms.

Considerable care is necessary in making these injections, since one who is inexperienced may puncture the trachea or plunge his needle into some of the large blood vessels. Also, an excessive dosage will produce symptoms analogous to those of myxedema or of the removal of too much thyroid tissue by a surgical operation.

To minimize the slight pain caused by the injection, Watson recommends the preliminary injection into the gland of a few minims of sterile salt solution, followed by sterile water, in order thereby to prevent an acute attack of hyperthyroidism, which otherwise might follow the slight pain of the quinine and urea infiltration.

We know that the symptoms of exophthalmic goiter may be and often are relieved by quinine hydrobromide, taken by the mouth, in 5-grain doses, three times a day, alone or in association with ergotin. This is Forchheimer's treatment.

THYROID POVERTY AS A CAUSE OF PYORRHEA

The battle regarding the etiology of pyorrhea still goes on. Probably the majority of our investigators are convinced that the amebas are the essential etiologic factor; nevertheless there are many who are convinced that the affection is of bacterial origin.

Professor Talbot, as the readers of this journal will remember, considers pyorrhea as essentially of a metabolic nature and associated with a condition of acidemia. The latest theory coming to our notice is that of Dr. Heinrich Stern, of New York City, who, in *The Archives of Diagnosis* (see that journal,

1915, p. 236), implicates the thyroid gland, believing that at least in a certain proportion of gingival lesions "these are a part manifestation of myxedema or minor degrees of hypothyreosis, and that these lesions disappear, together with the other phenomena of thyroid insufficiency, on the introduction of thyroid-therapy."

In support of this theory, Doctor Stern quotes from the records of some 52 cases of hypothyroidism. He says that 14 of his patients presented more or less pronounced gingival symptoms. Although all had received dental treatment, the results obtained were indifferent. The administration of from 3 to 9 grains of thyroid gland daily for six to fourteen weeks was followed by a complete cure of the gingival inflammation in 3 instances, improvement in 5, and slight improvement in 2. The condition of the remaining 4 was not ameliorated after three or four months' administration of the drug.

This therapeutic hint is worthy of further investigation, but we should advise no one to depend upon thyroid medication to replace therapeutic methods of established value, as, for instance, the use of emetine, which, while it may, and undoubtedly does, fail at times, is just as undoubtedly proving a splendid success in very many instances.

EPILEPSY OF INTESTINAL ORIGIN

It has long been recognized that in some way, not yet clearly understood, the intestinal tract plays a part in the etiology of the convulsive seizures of epilepsy. Dr. C. A. L. Reed, of Cincinnati, recently has evolved the somewhat startling hypothesis that back of the intestinal trouble in these cases is a specific organism, which, in some way, directly gives rise to the epilepsy. This still is an unproven hypothesis, but there can be no doubt in the mind of any man who stops to think this matter over carefully that in some way the intestinal tract is largely responsible for this malady, just as it is for so many other ailments.

More evidence in support of this belief is submitted by Dr. Edward E. Cornwall in an exhaustive study of one case of epilepsy, as presented in the July number of *The Archives of Diagnosis*.

The patient was a young man 21 years of age, a student at Columbia University, there being nothing in his family history suggestive of epilepsy. His first seizure occurred in 1913, and since then, at frequent intervals, he has had attacks of unconsciousness asso-

ciated with convulsive muscular movements. These attacks came on at short intervals, in some instances being less than a week apart. He observed that "at the time of these attacks and for short periods before and after he suffered from a coated tongue, bad taste in the mouth, foul breath, belching of gas from the stomach, intestinal flatulence, giving off offensive gases from the bowels, and constipation. He also suffered from these symptoms, though in less degree, off and on between the attacks."

An x-ray examination following a bismuth meal showed that he was suffering from a coloptosis, the transverse colon resting in the pelvis, with the ascending colon extending 1 1-2 inches above the iliac crest and the descending colon 3 or 4 inches above the iliac crest. There was dilatation of the terminal portion of the ileum, insufficiency of the ilocecal valve, but no distinct obstruction anywhere in the course of the intestinal canal and no particular stasis except in the terminal portion of the ileum. Constipation, however, was troublesome and showed a tendency to persist, unless relieved by means of laxatives.

The patient was placed upon a laxative diet, including also "lactacidized milk," and laxatives of various kinds were administered. Exercise was prescribed for him, to be performed before going to bed. The result was a greater regularity in the movements of the bowel, while the premonitory symptoms of the epileptic seizures became less prominent and also less frequent, and, most important of all, the interval between seizures became longer and longer and the attacks themselves were less important.

Isn't it striking how frequently investigation into the origin of disease leads us straight back to the alimentary canal? Of course, we do not mean to imply by this statement that a course of cathartics or a modification of diet is going to "cure" every case or, for that matter, *any* case of epilepsy; still the frequency with which the symptoms of that disease are modified and the fact that sometimes they disappear entirely when the bowel function is given the conscientious, consistent, and continuous study that its importance demands, should open the eyes of some of our clinicians.

Whether or not Reed is right as to there being a specific bacillus, we are convinced that at some time investigation of the bacterial flora will throw a great flood of light, not alone upon the etiology of epilepsy, but upon the etiology of a whole brood of other diseases of

obscure origin as well. Meanwhile, clean out, clean up, and keep clean.

THE INJECTION-TREATMENT OF HEMORRHOIDS

English medical journals, in particular *The Lancet* and *The Practitioner*, have recently published a number of papers regarding the injection treatment of hemorrhoids. This method seems to be much more in favor in Great Britain than it is in this country. In CLINICAL MEDICINE, last month, we reprinted a paper on this topic by Arthur S. Morley. In a letter published in *The Lancet* for April 15, F. Swinford Edwards comments approvingly upon Morley's paper and then presents his own very extensive experience with the injection-treatment.

Inasmuch as Edwards has operated upon some six thousand cases of hemorrhoids, he may safely be called an authority in this field and yet, he is a frank advocate of the injection-method of treatment. To quote his own words: "I cannot put it stronger than by saying that, if I were the subject of uncomplicated reducible internal hemorrhoids which called for operative interference, I should select injection in preference to any of the recognized operations; always provided that it could be carried out by one who had had at least *some* experience with its simple technic."

The great advantages of the injection-treatment, says Doctor Edwards, are as follows: (1) No confinement to bed, excepting for a few hours when possible; (2) no anesthetic, and therefore no postanesthetic vomiting; (3) no pain; (4) no enforced absence from business; (5) no risk from the little operation itself and no risk of stricture or incontinence following; and (6) immediate and steadily increasing betterment.

Of course, Doctor Edwards does not believe that every case is suitable for injection. Those which should be treated in this way, he says, are the uncomplicated internal hemorrhoids, which can be protruded, then returned and kept within the bowel.

Those cases that require subsequent attention in the hospital are subjects admitted for operation and who have, in addition, one or more of the following lesions: external tags, fissure, hypertrophied papillae, ulceration, even fistulae, or when the piles are of the internal-external variety.

Doctor Edwards, in treating hemorrhoids, employs an injection-fluid of the same strength, as that of Morley's, namely, 20 percent of pure carbolic acid in a mixture of equal parts of

water and glycerin. Formerly, he used a 10 percent solution of the phenol, but found, upon increasing the percentage of the carbolic acid, that recurrences were less frequent, while, moreover, the stronger solution is painless, and the other not.

Doctor Edwards describes his procedure as follows: "The piles having been protruded, possibly with the aid of an enema, the patient is placed in the knee-elbow position, with the buttocks opposite a good light. The parts are then sponged over with some antiseptic, say, lysol in water, and the injection made through a sterilized needle. From 3 to 6 minims of the carbolic solution is injected into the center of each pile, in turn. In large piles, I often inject 5 minims in two places. The piles are then smeared with vaseline or sulphate of iron ointment and returned as soon as possible, for, the injection always causes the hemorrhoid to swell; therefore, the longer they remain outside, the more difficult they are to return. I advise to prevent action of the bowels for forty-eight hours; and, should prolapse occur in the meantime, immediate replacement is essential."

Unlike Morley, Edwards injects the piles after they have been protruded, returning them immediately afterward. He agrees with Morley as to the desirability of injecting all of the piles at one sitting. While various other writers advocate injecting one pile at a time, Edwards can see no reason for this, and it seems to him an unnecessary loss of time. Piles that cannot be protruded should be left alone. They can be cured by palliative means, such as local applications, enemata, attention to diet, and regulation of the bowels.

THE HARRISON ANTINARCOTIC ACT

We find an excellent and very accurate review of the operation of the Harrison antinarcotic law in the London *Lancet* for April 1 (p. 738). As this journal points out, a year's experience in the operations of this law has demonstrated, "not only that the act was capable of smooth administration, but that during the period during which it has been in force there has been no sensible increase in the smuggling of the class of drugs which the act was designed to control." It is also stated that the larger wholesale dealers in drugs are quoted as saying that the sales of drugs of this kind have been reduced by 70 or 80 percent, while retail dealers

are agreed that the amounts supplied to the public have been materially restricted.

Some comprehension of the significance of this act can be reached from the official report of the first year's experience, in which it is stated that 140,000 medical practitioners, 42,000 dentists, 1100 veterinary surgeons, 40,000 druggists, and 400 manufacturing pharmacists have been registered under it.

That the government is thoroughly in earnest in its efforts to enforce the law to the letter, is shown by the further fact that the number of convictions thus far registered under the law is 314. How large the number of suits now pending is, we do not know, but it must be very considerable. "A fair idea of the strict manner in which the Act is being enforced," says *The Lancet*, "can be obtained from the fact that a registered person was fined for selling cocaine to a duly qualified medical practitioner whom he understood to be registered under the act, but who was not, the court holding that the plea that the seller had good reason to believe that the purchaser was entitled to buy cocaine was worthless."

Again we would urge every reader of this journal to exercise the utmost care in complying in every detail with the requirements of the Federal Antinarcotic Law. We believe that many physicians are careless, that they are taking chances. No man who values his reputation and his future can afford to do so.

CHLORAMINE: A PROMISING NEW ANTISEPTIC

Some months ago, we published in these pages reports of the remarkable results obtained, by Carrel and Dakin in France, with a modified Labarraque solution, (chlorinated lime treated with sodium bicarbonate, and boric acid), the solution being employed for the irrigation of wounds; particularly in the military hospitals. In a later paper, published in *The British Medical Journal*, Dr. H. D. Dakin (who, by the way, during the war, has been representing the Rockefeller Institute in France), suggested that it is among some of the chlorine-embodying synthetic compounds that the ideal antiseptic might possibly be found.

Among the compounds suggested by him, paratoluenesodiumsulphochloramide finally was settled upon as likely to be the most useful. A careful test of this preparation has been made, and the results obtained were reported in *The British Medical Journal* for January 29. This substance is a whitish powder giving off a slight odor of chlorine

when dry, but odorless when in solution. It is stable, nontoxic, and superior in antiseptic powers to phenol and other antiseptics generally in use. The solution may be used freely for irrigating wounds, since it is noncaustic and nonirritant.

The name *chloramine* has been suggested for this substance, and one English house has actually put it on the market under this designation. Unfortunately this name had already been adopted by another pharmaceutical manufacturer who applied it to another product.

Our readers will be kept advised about any further details published concerning this promising antiseptic, which, so far as we know, has not as yet been introduced in America.

SYNTHETIC ALBUMOSES FOR TYPHOID FEVER

A noteworthy announcement is that made by Professor Luedtke, of Wuerzburg (*Muench. Med. Woch.*, 1915, p. 321), who asserted having had some very promising results from the intravenous administration of synthetic deutera-albumose in 2 and in 1 percent solution. Defibrillation was rapid. Since the preparation of deutera-albumoses is much less laborious than that of specific serum, while the beneficial effects are equally good, Luedtke considers wider experimentation decidedly advisable.

INTRAMUSCULAR INJECTIONS OF MERCURY SALICYLATE FOR SYPHILIS

Dr. Wm. H. Best has great faith in the efficiency of mercury salicylate, given by intramuscular injection, in the treatment of syphilis. He takes sharp issue with Nelson and Anderson, who, in a recent paper, have questioned the efficiency of this drug, as checked up by the Wassermann reaction. Doctor Best believes that the failures of the two doubters are not ascribable to the drug, but to the method employed by them, in addition to giving too small doses. In a paper published in *The Medical Record* for March 11, (p. 473), Doctor Best reports a number of cases, and shows by the Wassermann-test reports that the effect is all that could be expected from this mercury compound.

Doctor Best's aim has always been, to keep the patient up to the point of saturation with the mercury salt, and, as evidence of this, he looks for slight salivation, a metallic

taste in the mouth and a slight sense of tenderness when the patient bites on his teeth.

The patients are instructed to pay great attention to the oral cavity and the intestinal canal. A heaping teaspoonful of sodium phosphate in water is taken every morning directly on rising (any other laxative saline will, of course, answer the same purpose), and he is told to drink copiously of water. As an extra precaution against ptalism, these patients are also given tablets of atropine sulphate, 1-150 grain, one to be taken if salivation becomes marked at any time following a mercurial injection; the same dose to be repeated in eight hours, if necessary, followed by a dose of magnesium sulphate.

The usual beginning dose of the mercury salt is 1 grain. This is increased by 1-2 grain at each injection, up to the point of tolerance. The interval between injections is not definitely fixed, but, as a rule, they are given once a week. Occasionally it is desirable to omit one treatment, as when, for instance, there is retardation of absorption, induration at the seat of injection, ptalism, excessive sensitiveness of the gums or irritation of the kidneys. However, if the excretions are properly attended to and hot sitz-baths and massage are indulged in frequently, such postponement of the injection is rarely necessary. Of course, when a patient is under intensive treatment of this kind, the toxic effect of mercury upon the kidneys should be kept in mind and the urine examined frequently. Doctor Best is accustomed to examine for albumin at each visit, and, if he finds more than a trace of it, a subsequent microscopical examination is made for casts.

The inconvenience sometimes complained of as a result of injections of mercury salicylate is due largely to faulty technic. While it is impossible to make these injections absolutely painless, the soreness experienced and the induration produced may be reduced to a minimum by taking care that none of the drug suspension is deposited in adipose tissue.

Doctor Best finds that women are prone to suffer more from these injections than do men, and this he believes to be owing to the fact that women have more fat deposited about the buttocks, and that, as a result, the fluid is more likely to be deposited in the adipose layers than in the muscle.

In order to overcome the objection alluded to, Best now uses a longer needle (length 2

inches); also, as a further precaution, he withdraws the needle quickly, and immediately exerts pressure upon the site of injection, massaging deeply but gently for a few moments, in order to prevent the suspension from leaking back ward in the track of the needle and thereby penetrating into the adipose tissue.

Should undue tenderness or induration occur, the patient is instructed to take a hot sitz-bath for ten or fifteen minutes each night before retiring, massaging the affected area all the time.

Of course, other indicated remedies are used in association with the mercury salicylate. For instance, in tertiary syphilis, he gives potassium iodide in ascending doses, while in the earlier forms salvarsan or other remedy is given, as may be required.

SODIUM CACODYALATE IN SYPHILITIC EYE DISEASES

On another page we have printed a communication from Doctor Barnett of Philadelphia, who is inclined to doubt the therapeutic efficiency of sodium cacodylate. He is especially skeptical as to its value in the later stages of the disease, and it is quite true that the majority of clinicians recommend it principally for primary syphilis. However, there is abundant evidence that it has decided therapeutic merit, even in advanced cases. This is attested by a report given before The Practitioners' Society of New York several years ago by Dr. C. S. Bull, and reported in *The Medical Record* for January 11, 1911.

On that occasion Doctor Bull reported three cases of syphilis of the choroid treated with the sodium cacodylate, the first being one of inherited syphilis, the patient first being seen when he was nine years of age. There was an extensive peripheral choroiditis, in the atrophic stage, with myopia and astigmatism. An acute attack of the disease appeared in the left eye, with rapid loss of vision. Mercury and potassium iodide were tried, both by injection and hypodermically for three months, without effect, the patient becoming practically blind. Thereupon Doctor Bull tried an injection of sodium cacodylate into the buttock. The following day there was improvement in vision. Two other injections were given in the next few days, and on the ninth day after this treatment was begun, the vision had risen to two-sevenths normal and the vitreous had become so clear that all the details of the fundus were visible.

The second patient was a man 32 years old, suffering from acquired syphilis of three years' standing. He had been treated with mercury and potassium iodide for fourteen months, and five months before Doctor Bull saw him had an attack of iritis and choroiditis in both eyes, and the vision was reduced to the counting of fingers. This patient was also given the sodium-cacodylate treatment, with immediate improvement. After three weeks the vision was 20-30 plus, that is, it was two-thirds normal.

The third case was that of a man of 27, with acquired syphilis of five years' standing. He also had been treated with mercury and iodide of potassium, and he was suffering from a large gumma on the upper lid, and another gumma of the sclera of the right eye of several months' duration. Under the cacodylate treatment the gumma of the lid began to soften, and after the fourth injection was entirely absorbed. The vision in both eyes was greatly improved.

In the discussion of these cases, Dr. W. A. Starr said that he had used the sodium cacodylate very frequently and with no ill effects; also that it was a much favored remedy in France. He declared that there was no remedial agent which acted so rapidly in general anemia and neurasthenia, for in both it had a remarkable stimulant and tonic action and in chronic functional diseases produces an extraordinary effect.

This brief report is reproduced at this time to give the readers of this journal some idea of the character of the reports which have appeared from time to time in the literature. As to the value of sodium cacodylate, not only in syphilis and pellagra but also in neurasthenia, anemia and even in tuberculosis, there can be little doubt. Like other drugs, it has its limitations, and these will be more clearly understood and the remedial virtues more fully appreciated when it has received further study. We shall appreciate reports from our readers.

IODINE FAVORING GROWTH OF TISSUE CULTURES

A. Pitini, of the Pharmacologic Institute of Palermo, has observed (*Arch. d. Farm. Sper.*, 1915; cf. *Ther. Monatsh.*, 1915, p. 270) a decidedly favorable influence of iodine upon cultures of certain animal tissues. The author draws a parallel between this action *in vitro* and the stimulation of diseased lymphoid and tuberculous tissues by the same agent.

Miscellaneous Articles

Therapeutic Ignorance

ONE who has any interest in *materia medica* and therapeutics very frequently comes in contact with some physician who seemingly has only a transitory education in these rather important branches of medicine. It is surprising to find how very little is known by a considerable number of our medical men, and more especially those who entered it during the days when therapeutic nihilism was rampant.

Not long ago, I was called in consultation with a man who came into the practice about ten years ago and who seemingly possessed no general education even in *materia medica*, to say nothing of applied therapeutics. We had seen the patient and returned to his office, where we were to prepare the remedies agreed upon. On looking over his shelves together, we ran across two or three drugs about which he confessed having little or no knowledge. In his search for the drugs we desired, a bottle of echinacea was picked up by him, then stood aside, with the remark that what he happened to know of it amounted to almost, if not absolutely, nothing—that what he did not know about it would fill a good-sized volume. A moment later, lobelia came to hand and was passed, with a like observation on his part.

He then ventured to ask what these two drugs were being suggested for, more particularly echinacea. He said he had seen something about that drug in some of the ultrascientific journals, but that those articles had not favored its use, and he believed it had been pronounced inactive, according to laboratory tests. Regarding lobelia, his lack of information was nearly as great, although he did admit that he knew the drug, given in sufficient quantity, acted as an emetic, but also that he had been told that it was dangerous to use. He did not know that it had any antispasmodic or relaxant action. Again did he quote the ultrascientific publication, as well as his teacher of *materia medica* and therapeutics.

I suggested that there might possibly be others who had employed both drugs, and with good results. "But," he objected, "such men are not authorities and they have not made laboratory tests." He insisted that as long as the laboratory men maintained that a drug was either inactive or too active to be safe it should not be handled by the average physician; nor did he think that any particular attention should be paid to them.

For the treatment of the patient, who was in the sthenic stage of acute pneumonia, I suggested a combination similar to the dosimetric triad, and the doctor could not understand why strychnine should be combined with aconite or why digitalin should be given at all in that stage. I also suggested that veratrum might be employed instead of the strychnine in the present case, as suggested by indications for the elimination of toxins; and he did not even know that the drug favors elimination. All that he knew was, that it serves to slow the pulse and reduce temperature, with a possible depression of the blood pressure.

When it came to dosage, the doctor asked what the dose of tincture of aconite might be. I replied that the U. S. P., 8th Revision, gave the average dose as 10 minims; but he insisted that never more than 3 minims was given, and probably less. Not having a dose-book at hand, I did not contradict him; besides, I did not think it necessary to give the full U. S. P. dose, but suggested giving 1 minim at short intervals.

After we had agreed as to the drugs to be employed, he wanted to know why drug the patient at all, when the disease was one of the "self-limited" kind and the patient would recover, or else die, despite all we might do? I replied, why then call a doctor at all, if he only were to sit idly by and watch the various phases, with nothing more to be done by him? I asked him if he had ever seen or known of pneumonia being aborted,

or at least abated, by the employment of the proper indicated remedies. He admitted that he had not, nor did he believe that anyone else had; adding the time-honored remark that, if anyone had said anything of the sort, there must have been a diagnostic error and that there had been no true pneumonia.

The doctor had already given calofuel and a laxative saline prior to my arrival, so that the patient's bowels were well cleaned out. I suggested the use of an intestinal anti-septic, whereupon he asked why the indication for that in pneumonia—that the gut was not involved, and he could not see why it should receive such attention. I told him that I had found that clearing out the bowel and keeping it clean prevented accumulation of toxins and favored greater elimination of toxin-producing material. Again there came the other time-honored assertion, that it was impossible to render the whole bowel, with its numerous twists and turns, clean or even partly aseptic. This I did not dispute, but told him that my observations were that, with intestinal fermentation controlled, there seemed less liability to delirium, and that the other conditions in connection with the disease seemed to yield more readily to treatment; while, in addition, a patient with a clean bowel suffered little or none of the slight abdominal distress so common to all sick persons. His education having been to the contrary and he not being willing to be re-educated along this line or even to try out a remedy, so that he might see the possible effect, such as had been suggested, the anti-septics were not employed.

When it came to the question of dosage, although we were not employing the active principles, I suggested small amounts of everything given, and these to be administered at frequent intervals. Here again it was found that a new proposition was lined up for his consideration, and he could not understand how we could expect results from such minute doses—that he had been in the habit of giving the full doses at longer intervals. He could not understand why the drug effect was reached at all. This was explained to him, and finally my suggestions were accepted, and results entirely unexpected by him were obtained.

He added whisky to his line of treatment, and I asked why the need and whether the strychnine did not assure as good, if not better, stimulation. He replied that he had been taught invariably to give alcohol in some form in this disease and that it was a

matter of routine with him. In this particular case, there was more or less delirium, and I suggested that the whisky possibly might increase that condition. I also suggested that there was every indication of toxic poisoning, so, why add another toxin or toxin-producing agent. But he could not see it that way, so, the whisky was given for a few doses, until it was found that the delirium persisted; when, upon my suggestion, it was withheld. Within about two hours, owing to the effect of the aconite and veratrum (particularly of the latter, in all probability), the delirium began to subside and with it the pulse and temperature, and the patient fell asleep.

While we were talking over the case and searching for drugs to be used, we ran across some galenicals that were far from being in proper condition, and I asked why he did not employ more of the alkaloids and other active principles. His reply was that he had been taught that most of the alkaloids were too potent for general use and that he did not care to take any chances with them. I asked if he had given them much study, and his reply was negative. When I said that I wished that I had aconitine instead of the tincture he had in stock, he remarked that no one in his proper senses would employ that alkaloid—that it was too dangerous to use. I told him that I had used aconitine for upward of ten years and had never seen any bad effect whatsoever that could be traced to the drug, and he "guessed" that probably I was working with an inert preparation and that my lack of mishap was due to that fact. I replied that the product might have been inactive, but that, when exhibited properly and to meet exact indications, I had seen both pulse and temperature drop in a most satisfactory manner and without a single contrary or undesirable effect. Then he asked if I did not consider my results as coincidental, rather than due to drug effect. This I denied, saying that the aconitine had been tried out too frequently and with such uniform results as to wipe out the question of anything like coincidence. I asked him why, if so fearful of aconitine, he employed the tincture of the root, which owed its action to the alkaloid contained. To this he could give no rational answer, and fell back on his plea that the segregated alkaloid "seemed to be more potent" than that contained within the crude-drug extract.

On another occasion, while caring for his practice for a day, I was called on by a man suffering from intestinal fermentation. Hav-

ng nothing else at hand, I exhibited aspirin, and was asked, Why? I replied that an intestinal antiseptic seemed indicated and that, while other agents might be better than the one employed, like all salicylates, it probably or possibly might have the desired effect, and that I used it for the lack of something really better. The doctor said my ideas might be all right, but again insisted that the bowel could not be rendered aseptic. However, for some reason, the fermentation was overcome and the man returned to work the following day, minus any intestinal distress.

Then I asked the doctor why he did not place intestinal antiseptics in stock and employ them in such cases, and his reply was a good deal like the one appearing in some of the ultrascientific journals—that such drugs or chemicals were greatly overrated, and he could not see any real reason for their use. He said that a cleanout, followed by a dose of paregoric, did the work very well for him. I asked how many recurrences he had, and he was forced to admit several such. I told him that with the intestinal antiseptics I rarely, if ever, saw a recurrence of any acute bowel disturbance, but this he would not believe, as he said the "authorities" asserted to the contrary.

These are a few of the examples of therapeutic ignorance shown by one man. In my travels, I have found many more of like sort, until I have about reached the conclusion that, with many doctors, very little is really known of the right remedies to employ or of their indications. I have found this more especially true of the younger men—those who have come into practice within the past ten or twenty years. The majority of these have had the U. S. P. and N. F. so firmly fixed in their minds that nothing outside these two books, so far as they are concerned, is worthy of even the slightest consideration.

The man in question entered into a tirade against some of the proprietaries, but when I called his attention to some products on his shelves which he was employing daily he said they were N. F. formulas. I asked him if he did not know they were substitutes for proprietaries, but this he would not admit. He said he did not know anything about the latter and, furthermore, did not care for any such information. He said that at least one good (?) "authority" said that proprietaries should not be employed, and that we should not question that assertion, especially we who were not possessed of

laboratory facilities to offer a final basis for argument. I asked if he did not consider clinical manifestations worthy of attention and he said no, not in the face of the findings of the "authority" in its laboratory. I asked him if he did not think it possible that a drug might be effective when administered to a sick person, though inactive when given to a healthy animal, and he replied that, if it were not active in the latter case, it surely could not be in the former.

With such crass ignorance about the tools of our trade as is shown by a goodly number of doctors, it is great wonder that the public is not more disgusted with us than it is. When we admit that "nature must take its course" and that all we can do is to tell the patient with what disease he happens to be afflicted, and then sit idly by to see him either die or recover, we must expect nothing but disgust and distrust. We must expect to see the cultists and faddists live and thrive.

The time has come when the medical profession, as a whole, must inform itself as to how best to treat the many abnormalities confronting us. Men must know what drug is indicated under certain specific conditions and how best to employ it. They must study therapeutic specificity to a greater extent.

Much is being written and said at present about "borderline diseases," and there is much discussion as to whether they shall remain with the internist or go to the surgeon. It is my belief that, as we give better study to our internal therapeutic agents, fewer of these cases will go on the table for operation. We are seeing a return of the gastric- and duodenal-ulcer cases to the internist; and this despite the fact that the surgeon has worked out an admirable technic and taken good care of such cases. We are seeing some of our appendix-cases, those in the catarrhal stage, doing pretty well under medical care and without operation. It may be true that we do not get complete recoveries in this latter disease, but we do relieve the patients of the many discomforts that occur after operation, and keep them in fairly good, working health.

We of the regular school are too prone to find fault with and ignore those men of other medical faiths. This is particularly true of the Eclectics. If the truth were really known, it probably would be found that men of that school could teach us much regarding the proper application of therapeutic agents. I have followed up and applied some of their teaching, and with very good results. They

were the ones to introduce the idea of small and frequently repeated doses, and today we find the regulars, to some extent at least, adopting this method of medication, and with good results. I am not saying that we should use their "specific medicines," even though they may be, and very probably are, active. No matter what the drug preparation may be, whether it be alkaloid, glucoside, resinoid, tincture, extract or fluidextract, the Eclectic idea of dosage still remains good, and is, I believe, from personal observation and application, the proper one to employ.

However, no matter what method we employ, we must have a better idea of the things that we should employ in the treatment of the sick. We must be broader of mind, and not depend to such an extent upon what someone else tells us, but base many things upon our own, individual observations and upon the findings of many.

If one follows the books to any considerable extent, he will find, when it comes to discussion of treatment, that the authors copy very largely from those who have gone before. Some of the writers show some initiative and some accept the ideas of the rank and file, rather than of those men who are doing consultation work, very largely as diagnosticians, and who rarely follow any case from start to finish.

We should quit confining ourselves to the reading of just one or two medical journals, but hunt out information in the many—even in some of those which are subject to the ridicule of the ultrascientific ones. The man in the field, if successful (and a good man is) is not wholly w/out a working mind, and it is my belief that at times his opinion is worth as much as that of the man who sits upon the pedestal of authority. The former sees every phase of his case and combats every little change, and, so, gets a better idea of what is good or what may be bad. He gets his ideas from the practical application of his remedial agents in the treatment of the sick human, and, as he is very frequently successful, his methods cannot be all wrong. We have noticed that the backwoods doctor, in the vast majority of instances, has no greater mortality than does he of the metropolitan hospital; so, why not accept what he has to offer?

But, why argue when it is a self-evident fact that we must increase our knowledge of things therapeutic if we would see our profession and its members thrive, prosper, and do good work? There is no excuse for thera-

peutic ignorance when an adequate knowledge of drugs is essential to success.

GEORGE L. SERVOSS.

Reno, Nev.

CALCIUM SULPHIDE AN ANTIDOTE FOR MERCURY POISONING

In the March number of CLINICAL MEDICINE (page 253), we published a brief statement regarding the use of calcium sulphide as an antidote for bichloride of mercury poisoning. This report was made by Wilms, who cited some very remarkable cures in apparently desperate cases of poisoning with this chemical.

At the last meeting of the Illinois State Medical Society we learn from the newspapers, Dr. B. Merrill Ricketts, of Cincinnati, gave a further report of the use of calcium sulphide for its antidental effect. Doctor Ricketts made the statement that this treatment was worked out in his own laboratory, and he related several instances where the treatment had been successfully tried. One California woman, he said, had taken 80 grains of bichloride of mercury and her life was saved by the neutralizing effect of calcium sulphide.

His directions for administering the drug in cases of bichloride poisoning are as follows: For each grain of bichloride of mercury swallowed, give one grain of calcium sulphide by the mouth every two hours for five doses. If the treatment is not begun until forty-eight hours or more after poisoning has occurred, then the remedy (calcium sulphide) should be given intravenously, the dose being, as already stated, one grain in an ounce of water for each grain of the mercury salt.

This remedy is certainly a simple one; also, it is a remedy which practically every reader of this journal should have in his pocket-case, on account of its exceeding value in the treatment of scarlet fever, measles, whooping-cough and other contagious diseases. When its emergency action is required in a case of mercury poisoning, it is only necessary to administer the granules by mouth in appropriate doses. In order that action may be immediate, it may be

desirable to give these crushed with a little sugar. When intravenous medication is desired, there is no objection to using the granules, crushed and dissolved in the necessary amount of water.

This is certainly the simplest antidote for bichloride of mercury ever suggested. It is something which is easily obtained and easily

administered; and if we may believe Doctor Ricketts, it is, by all odds, the most effective antidote as yet discovered.

We hope that every reader of CLINICAL MEDICINE will keep this suggestion in "the front of his head," so that when opportunity arises he will not forget its possibility.

At this point we are tempted to moralize. For years we have been advocating the use of calcium sulphide in the treatment of the various infectious diseases. We have believed, and still believe, it to be the most powerful germicide available for internal medication when safety, nontoxicity, efficiency and ease of administration are all taken into consideration. In our opinion, there is no single remedy equal to it for the treatment of the contagious diseases of childhood, but the physician must be sure of the quality of his drug (for there are few drugs of which such a large percentage of poor quality are on the market), and he must give it in full doses, to effect.

A BETTER METHOD OF UTILIZING CLINICAL MEDICINE

In the April number of CLINICAL MEDICINE, on page 367, is a suggestive article by Doctor Kohberger entitled "An Idea for Utilizing Clinical Medicine." The ideas presented are excellent. Instead of mutilating my copies of the journal, however, I save them and keep an index reference file for articles that I may hereafter wish to refer to. This only requires a few minutes and saves the balance of the magazines, for there are usually several articles in each number that one wishes to save, and in cutting out one article another article of equal importance may be ruined.

For instance, opening my reference file at the letter "C," I draw out a card on which I see "Circumcision, AMERICAN JOURNAL OF CLINICAL MEDICINE, August, 1912, page 787," and other articles likewise. If I consider it advisable, I list the article under two or more heads or letters, i. e., "Chenopodium, oil of, see under 'H' (Hookworm)," and then turn to the letter "H" for the article.

Where I do not wish to save a whole magazine, I clip the article that I wish to save and file it, but I may add that I have preserved my file of AMERICAN JOURNAL OF CLINICAL MEDICINE complete for a number of years, and several months ago found that some copies were missing and at once sent to you

for the missing ones. I can not afford to lose any of them.

C. W. TOMPKINS

South Jacksonville, Fla.
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[A ten years' file of CLINICAL MEDICINE from a practical standpoint, is better than a whole library of textbooks. By the use of the index the physician can usually find practical help on almost any subject he may think about. You know how often you will be "stumped" when trying to run down something in the books. We can supply indexes for several years back to those desiring them. No charge.—ED.]

CURRENT COMMENT BY A COUNTRY DOCTOR

Sexology.—Dr. Wm. J. Robinson, of *The Critic and Guide*, certainly handles the various aspects of the sex-question without gloves, at least with skintight ones. Without entering into an extended discussion anent the advisability of birth limitation or, rather, the manner and extent of its advisability, this writer can not but endorse the work of strong, virile workers like Robinson, Jacobi, and others in their efforts to force a better understanding of this complex question by the people and their lawmaking exponents.

The questions relating to sex-ethics are not for the purist to handle; they can be solved only by using the plainest of speech. The idealist, be he theologian or not, who avers that he is accomplishing great results by teaching male continence (most commendable, we will admit) is known, by the medical profession, to be in error. He is accomplishing practically nothing at all in the way of disease prevention or in lowering the rate of illegitimacy, although, by his teachings, he may have preserved a negligible number of young men from sexual immorality and venereal diseases.

Some cities hide the prostitution in their precincts by spreading it, others have their "red-light district," but everywhere there is prostitution. In various ways the evil exists. Go to a settlement on the frontier outposts of civilization's advance, and what do we find? A spread of sexual disease among the natives, often almost to the point of extinction of the native type, together with a "backfire" in disease onto the "higher race." And this rule holds wherever a lower race has not been numerically strong enough to survive the disease onslaught by dilution, or,

unless an "inferior race" be protected by a rigidity of race-purity regulation and seventh-commandment observation outdoing the sternness of the Mosaic code. Examples of the latter are the Yaqui Indians of northern Mexico, who for hundreds of years have maintained comparative race purity, resisting conquest by Spanish and, later, Mexican invaders, and thus still remain a "people" (although Mexican subletting of Yaqui exploitation to American concerns seems to spell Yaqui finish), together with the branches of the Navajo tribes.

On the other hand, glance at what "civilization" did for the Hawaiians and certain tribes of American Indians, the Mojaves, for instance. It has managed to spread the unblessed trinity of the two venereal infections and tuberculosis, besides a few other diseases thrown in as a result of miscegenation.

Such miscegenation proved so baleful to the higher-type race that various laws to prevent its spreading—even to tribal extermination in the case of certain "ites"—were put into the law-books of the Hebrew theocracy. Yet, even the excellent judicial and administrative powers of the Hebrews failed to accomplish as much as did the one religiohygienic regulation of circumcision—a tacit admission of the prevalence of the social evil; an evil of which we speak with hushed voice and which we decline to discuss with candor. The idea of the Jews seems to have been, "Don't do it; but, as you will do it anyway, avoid disease." Other early peoples practiced the same sanitary precaution, but with the Hebrews it was a compulsory religious rite, to be observed in infancy. Moses, that master of ancient hygiene, was strong on plenty of water and all the other prophylactics known in his times.

Why can we not emulate Moses and teach prophylaxis, until we can convert the world to a desirable degree of male continence and so protect our women in their economic environment that an equal financial chance with the male will do away with the prostitute. "Prostitute" is here used in its full sense, and it includes the female who hurriedly has her clandestine meetings elsewhere than in one of those "gilded dens of infamy," those places where the "landlady" and perhaps her special henchman of Satan rob her until she becomes a "dope-fiend" (or did before we had the Harrison law), but, rather, a room where she (or many of her kind) provides antiseptics, in contrast to her alley-hunting sister of the scarlet robes.

This thing of sex is a big subject, but this writer believes with Dr. Isadore Dyer, of New Orleans, that society is large enough and broad enough to handle it. An ever-dominant factor is the natural polygamous tendency of the male. Go almost anywhere in the range of organic life, even back to the lilies of the field, that trust their reproductive needs to the breezes of the spring; consider the fishes, so liberal with their fertilizing elements that they entrust them to the chance commingling of the waters; then contemplate the higher vertebrates, where nature is so reckless with the seeds that she permits descent to an exposed position of the essential male generative organs; everywhere the same thing is seen. True, there are exceptions to the rule, especially in plant-life; but, the fact is that the male can be looked to for prodigality and the female for conservation. Pretty large subject this to oppose with cautiously chosen phrases; complicated enigma for mongers of sectarian—or even sex—philosophy to deal with; yet, not too vast for the evolution and progress of our modern age.

Do not leave too much medicine.—Recent writers in CLINICAL MEDICINE have well and aptly treated on this subject; nevertheless, still more can be said about it. When leaving medicine (especially in tablet form) with a patient not having in attendance a well-qualified nurse, it is an excellent rule to avoid, whenever possible, leaving enough of a potent drug to total a lethal dose if given within a short time. Mistakes will happen, and the value of this rule has been proven. Recently the writer had a case exhibiting distressing asthmatic features. Glonoin granules were left with which to control the cardinal symptoms, capillary dilation being the cardinal aim. Directions were written out, as an additional precaution after most careful verbal instructions; also, orders were given to call at the office for further medicine, and at the same time to bring along some of the patient's urine. When the messenger arrived, as agreed, he reported that the difficulty of respiration was gone, but that a horrible headache had taken the place of the original symptoms. This headache was of a kind seldom seen except in those who use nitro-glycerin for blasting purposes. Most fortunately, I had not left them enough of those 1-250-grain glonoin granules to work greater havoc than to cause the bad headache. A change of volunteer nurses had been made and my instructions had become badly mixed in consequence. I need not add how we all

know what can happen from the leaving of opiates in the hands of the inexperienced.

Many times lack of intelligent nursing help will induce the doctor to select a less potent remedy than the one first thought of. This is often a serious problem in country practice, and many a time there is no other way than for the physician himself to remain and see a patient over a crisis; thus spending time that properly belongs to his other patients, mention of his personal convenience being left out altogether.

This is a difficult feature of country practice, but one that can not be avoided and one that can be turned into profit, even if the patient can not afford to pay for the extra time. These delays can be utilized for study, if one always will have with him a late medical magazine or something he wishes to read up on. If one is too tired and too much in need of rest for study, it is a good plan to take the lightest thing obtainable in literature or something pertaining to one's hobby. Anything to relax brain tension, even down to Nick Carter, if that will concentrate attention; this is the real value of light fiction to a professional man and a hard student. The writer actually has known a hard thinker who relaxed tension at times by reading Nick Carter's fiction masterpieces, although personal preference is for Victor Hugo. If one is a follower of the suggestion of the editor of CLINICAL MEDICINE regarding his encyclopedia reading, he will always have a fresh subject of interest and of healthful, mind-broadening character.

Aside from the undesirability of leaving potent emergency remedies with a patient, the same plan of limiting the amount under all circumstances should be followed out. One should keep in touch with his patients, not alone so as to observe any change in conditions, but also to maintain over them the ever necessary psychological influence for achieving best results. The sufferer from chronic disease will follow directions better and feel his physician's personal interest in him more if he sees his doctor regularly.

Patients of this class should pay a visit at least once a week under ordinary circumstances, and when they do come in they should receive attention beyond a mere perfunctory refilling of a prescription and a "How are you this morning, Mr. Smith—better, I'm sure?" Have Smith bring some of his urine with him and see what this best index of metabolic activity has to say about it; also, do not forget that his progress may be indicated by a blood-count. Give the

patient careful attention in every way, do everything that seems necessary, and then dismiss him with but just enough medicine to last him until his next appointment. Be sure that he knows that he is receiving every needed care and that he will soon see he is getting modern service.

Above all things, do not, when called upon, send by, say, a husband, a bottle of that "same kind of medicine" you gave his wife for her rheumatism. That dollar this man brought along may look good to you, but it is not; you are not a vender of patent medicines. The reason why that medicine did that man's wife good was, because you saw just what her condition was at that particular time. Let that dollar go right back home, and let Mrs. What's-her-name herself come to you with it, and another one besides for her proper examination. The lady would like to have a refill and a copy of this prescription, too, so that she can hawk "doc's" prescription all over God's creation. But, you have no "favorite prescription." *Let that dollar go!*

Those Active Principles.—To one who has always been a believer in "specific medication," with the full understanding that "specific" does not mean specific for a named disease, but specific in effect on certain symptom-groupings, the arrival of a fuller list of active principles means a greater number of accurate remedies at command; sometimes with the necessity of separating the action of an active principle from the action of the whole drug. To one who has been in the habit of grouping therapeutic agents according to their gross physiological action, acceptance of the finer differentiation of specific medication opens a new field and wonderfully increases efficiency of work as expressed in results.

The day of the internist is here, if he will but avail himself of the newer methods of treatment, including the use of the active principles, animal-therapy, the bacterins, the modern agents both for external and internal antisepsis, and up to date diagnostic aids. All these, together with the latest hygiene and rational dietetics.

Let any physician who has never used the active principles select a few having the plainest indications, and before long he will marvel at the broadening of his therapeutic resources and become a successful user of many drugs of which he before knew practically nothing. The man having a thorough working-knowledge of modern therapeutic means for the alleviation or cure of disease

can outdistance his competitor who boasts that he uses only half a dozen drugs in addition to his hygienic prescriptions. The competitor is practically only advance agent for the surgeon or other specialist; incidentally also a recruiting agent for the various drugless fads and fancies that have grown up through spread to the laity of medical nihilism.

If a patient is unsuccessfully treated by a physician who intimates to him that disease is practically self-limited or incurable and that, beyond opening the bowels or giving an opiate, there is no value in medicine, except surgery, no wonder the sick man makes a break for the esoteric egotist, who at least has effrontery enough to give high-grade suggestion.

"Clean out" those patients, then get very busy with the indicated remedy and cure them, thus they will not be added to the vast number who not only keep away from the physician, but are active in their propaganda to keep others away. Don't be so afraid of that word "cure." Never mind if the fossilized living or the revered ghosts of those who departed this life in hide-bound conservatism are, and were, medical nihilists—we do not have to be also.

Rhusoid. Of the numerous drugs which have received undeserved neglect at the hands of very many practitioners, rhus toxicodendron (just poison oak or poison-ivy), which has enough latent drug-power to make itself manifest in misery to many, *by such small dosage that they claim to have "just passed by it,"* is one.

Reading a recent symposium upon the treatment of sciatica, the writer saw nothing about the use of rhusoid or of colchicine, but much as to improvement in the technic of the old surgical procedure of "stretching" the nerve, and also something of injections of alcohol or hot water at the nerve site. Cases there doubtless are which call for such heroic treatment, but, many have received this line of attention who, we believe, would have gotten well under rhusoid and colchicine, both pushed to effect.

If the pains are boring in character, relieved by motion, and the pulse is the quick, sharp one of pronounced irritation, the case of sciatica is one for rhusoid, before stretching the nerve or other heroism is thought of. Add to these indications frontal headache, papilla of tongue red, burning sensation in parts of the surface and pain on the left side, or worse on left side, and an outline picture of a rhus-patient is given.

In all cases of "rheumatism," the first two remedies thought of should be, rhusoid and bryonin to relieve, the symptoms calling for either easily separating themselves. Rhus-pains are relieved by motion, bryonin pains are made worse thereby, bryonin being a remedy where serous membranes are involved.

Rhusoid is often efficacious in enuresis and in other conditions, but the present mention is of its remarkable efficacy in rheumatoid troubles, *where indicated by the symptoms.*

Rhusoid, bryonin, macrotoid, and colchicine constitute a group of wondrous powers if used accurately according to the symptomatology and in connection with proper elimination—an imperative measure. The entire resources of modern medicine have not been exhausted with a systemic saturation with the salicylates. If the patient is a "chronic," it is a safe wager that he has already been loaded with these, sometimes most essential, drugs.

Take hold of the case in earnest, examine the urine and do all else possible to determine the nature of his "rheumatism." Local applications are at times of aid, especially for the palliation of pain. Where swelling or congestion exists, the hot saturated solution of magnesium sulphate is often without a superior; and it may be applied under oilsilk, thus avoiding frequent changes. The rheumatism combination of Doctor Candler frequently is effective in very stubborn cases, and the colchicine which it contains is a most excellent pain-reliever to alternate with rhusoid or other selected agent. Most of that "rheumatiz" and "gout" can be cured.

A. L. NOURSE.

Sawyerville, Ala.

INTRAVENOUS AND SUBCUTANEOUS MEDICATION

There is a growing interest in intravenous and subcutaneous medication; and as CLINICAL MEDICINE is always "Johnny on the spot" in presenting to its readers everything that can be helpful, we are anxious to have an expression of opinion from as many of the readers as possible regarding this method of treatment. I hope that many of you will tell us, in a brief letter for publication, something about your experience in this line—particularly with intravenous medication.

What is your technic? What kind of syringe do you use? What is the length and caliber of the needles you employ? What precautions do you take against accident? Have you had accidents of any kind? How

much solution do you inject? What remedies do you employ in this way? What are the advantages and what the disadvantages of this method of treatment?

I hope that a great many readers of THE CLINIC will write me. I want a symposium that will be a real symposium.

INTRAVENOUS MEDICATION

While for years I have thought it one of the best of medical journals, CLINICAL MEDICINE is growing better every month.

The May number, particularly, is full of good things, and in this Doctor Neiman's article on sodium cacodylate is especially interesting to me, as I have used this remedy intravenously for several years, and with such splendid success that I have come to believe that most of the failures reported have resulted from too small dosage. As for myself, I give 5, 8, 10, and even 15 grains of the cacodylate, and in more than 1000 injections I have as yet failed to see one bad result follow these large doses.

While we see practically no pellagra in the North, from an analytical study of the diseases and the drug, the cacodylate seemed to be the one remedy to fit a majority of these cases; and in an article published in *The Medical Standard* of October, 1914, I mentioned Elrod's report of a very satisfactory result from its intravenous use in pellagra.

Pсорiasis is another disease that responds to the cacodylate in a very satisfactory manner in a good percentage of cases.

I am using a number of other remedies intravenously, and one that is making good with me is the sodium glycerophosphate in sciatica, facial neuralgia, and various other nervous conditions accompanied by pain. Spinal irritation and the pains of tabes are often relieved by the intravenous use of this preparation.

In numerous cases of rheumatism, I get prompt results from the intravenous injection of sodium salicylate and caffeine, especially in rheumatic fever.

These remedies are marketed in sterile ampules, in various-sized doses, convenient for use. No drug should be administered by the venous route unless it can be made sterile without losing its individuality and activity, and it requires care and study to secure this end.

It is really unfortunate that so many physicians are afraid of the intravenous method of administering drugs, inasmuch as the prompt results, with the assurance that the

indicated remedy gets into the blood stream unchanged, together with longer intervals between treatments, has advantages over other methods in many ways.

W. N. FOWLER,
Kalamazoo, Mich.

[We are promised a paper on intravenous medication, giving the technic of this form of medication in such detail that the method can be mastered by any competent physician. We hope to be able to print this article within the next two or three months. Useful formulas and many therapeutic suggestions will be embodied in it.

Much that Doctor Fowler says in praise of intravenous medication also applies to hypodermatic medication. Unless the drug is one that is irritant, therefore causing considerable pain, the ordinary subcutaneous route is the one that appeals to most physicians. But there are remedies that should be given intravenously, for one reason or another. And this is "another story."—Ed.]

AN OMISSION FROM DOCTOR RITTENHOUSE'S COMMENT

In the May number of CLINICAL MEDICINE, in my comment on Doctor Ewing's article, page 446, second column, the accidental omission of a sentence renders my meaning obscure. The passage should read as follows:

"I apply the Hodge forceps, which I always carry, in the usual way. Then I pass a strong fillet of gauze through the fenestra of both blades. An assistant pulls moderately on the handles in the direction of the patient's feet, while I make traction on the fillet downward and backward."

Omission of the italicized words rendered what follows unintelligible. Readers should enter this correction.

W.M. RITTENHOUSE,

Chicago, Ill.

SALVARSAN AND SODIUM CACODYLATE

In CLINICAL MEDICINE for May, Doctor Neiman offers sodium cacodylate as a good substitute for salvarsan. As instructor in genitourinary diseases in the Philadelphia Polyclinic Hospital and College for graduates in medicine, I have had the opportunity to study 500 cases of syphilis, the result of which observation will be published later. Many of these patients were treated with sodium cacodylate, both intravenously and intramuscularly, and I have yet to see the case

that showed any marked signs of improvement or any improvement in the Wassermann reaction. I, therefore, cannot permit such statements as those by Doctor Neiman to go unchallenged.

In your editorial, you show how nicely Dr. J. B. Murphy cures chances with this drug, but he does not tell us how the blood condition will be after he is through. I wager anything that the blood would show a positive reaction. What good, then, is the sodium cacodylate? Knowing this, would it not be criminal for me to try to cure the earliest stages of syphilis with this drug, the stage in which, since the introduction of salvarsan we have hoped to eradicate this disease from the human system?

Let me say here, whether it be Murphy, Neiman or anyone else, that you can not cure syphilis—that is, effect a radical cure—with sodium cacodylate. You cannot with it, improve the Wassermann reaction; in fact, every article that I have read and my own experience have shown that the drug has no effect upon the Wassermann reaction.

Our latest method of trying out this remedy has been, to give as high as 30 grains twice weekly intravenously, yet, the patient did not display any toxic symptoms whatever. And this, I am sure, is a larger dose than any of the authors ever used; and, yet, this great amount has failed to produce any effect upon the lesions and upon the Wassermann reaction.

I recall a case of secondary eruption of about two weeks' duration, in which the patient could not afford salvarsan or its congeners. So, we gave him, intravenously twice a week, $7\frac{1}{2}$ grains of sodium cacodylate (by the way, his Wassermann test showed strongly plus) for 5 weeks, and then 15 grains twice a week for three weeks, and then 30 grains twice a week for two weeks; but this was without any effect upon the Wassermann reaction, although a very slight fading of the eruption occurred. The total cost of this course of cacodylate amounted to nearly as much as two doses of salvarsan would have cost him as a hospital patient. Would not two doses of salvarsan have removed his eruption and reduced his Wassermann? From my experience in such cases I say, yes. Why, then, use sodium cacodylate?

In another case, one of sarkocoele, with the Wassermann reaction strongly positive, 30 grains of the cacodylate were given twice weekly for five weeks, without producing any effect upon the size of the tumor or upon the blood.

What more than these cases do we need to prove the worthlessness of sodium cacodylate?

However, Doctor Neiman used mercury in conjunction with this drug. It is perhaps the mercury in his cases that produces the results; it certainly is the cause of any improvement in this patient's blood. Let him use the sodium cacodylate alone, and he will soon prove this to his own satisfaction.

Regarding the statement in your journal about the Philadelphia arsenobenzol, as to its not being made for profit or sale, you have been wrongly informed. Just look at your page 43, and you will see that you have an advertisement of that very drug, saying that it is for sale.

You say that true salvarsan is not to be had, and this is a fact. And I want to say that it is a Godsend that Doctor Raisiss, the chemist, in conjunction with Doctors Schamberg and Kolmer is working this drug out; because it, and it alone, is the best substitute we have for true salvarsan. It not only will heal the lesions, but will clear up the blood as well.

However, it requires more doses of this latter drug to effect a radical cure than it does of salvarsan. But what of that? I feel that I can safely speak of this drug, because we have used about 100 doses of it, and also I have seen Doctor Schamberg and his coworkers give about 200, and I find that the reaction is very slight. Most patients can go home and do, immediately after receiving the injection, without experiencing any ill effects on their way.

Therefore, I strongly advocate this Schamberg arsenobenzol as a substitute for true salvarsan. There is another substitute, and that is arsenobenzol "Billion," a French salvarsan. But I do not recommend it because the reactions are so severe that 80 percent of the patients must remain over night.

In conclusion, I will say: (1) The best substitute for salvarsan is the arsenobenzol that is made here in Philadelphia. (2) The next-best is the French arsenobenzol Billion, but it has too severe reaction. (3) Sodium cacodylate never will take the place of salvarsan or of its congeners; it is without effect upon the blood. And no luetic can be considered as cured unless the Wassermann reaction is negative and remains so.

CHARLES H. J. BARNETT.

Philadelphia, Pa.

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[We are very glad that Doctor Barnett has taken up his cudgels in behalf of salvarsan,

or its American substitute, arsenobenzol. We certainly do not forget the value of Ehrlich's great discovery, and when salvarsan is obtainable we recommend its use, providing the physician understands thoroughly the technic of its administration. It should be remembered that there have been many accidents and not a few deaths following its use, while sodium cacodylate is practically nontoxic.

We believe, however, that Doctor Barnett has gone to the other extreme in his condemnation of sodium cacodylate. That this remedy has very great value in syphilis is as nearly established as anything therapeutic can be. While it may be true that its administration is not followed by a negative Wassermann, it is equally true that, given in early syphilis, it almost invariably produces improvement in the symptoms and cessation of physical evidences of the disease in a manner which is, as Murphy and others have stated, truly remarkable. The writer has read a number of articles about sodium cacodylate, and thus far he has not found one which denies the value of this remedy in early syphilis. He can refer you to articles by Spivak, Suggett, Caffrey, Bull, Schirrmann, and others, appearing in a number of medical journals.

Of these writers, Louis J. Spivak, who is pathologist and serologist to the genitourinary department of the Jefferson Medical College Hospital, is about as careful and as critical as any. While he agrees with Doctor Barnett that the effect of the drug on the Wassermann reaction is practically nil, he declares that it is "a useful adjunct in the treatment of syphilis, especially where salvarsan cannot be used, either for financial reasons or through some physical condition of the patient." He adds, "Sodium cacodylate is cheap, easily prepared and very easy to administer"; and he also says: "It has a marvelous effect on the initial lesion and on the maculoroseolar eruptions. The action on the papular syphilitoderm is somewhat slower, but in large doses it is effective. The drug has practically no effect on the adenopathies. Enlarged cervical, epitrochlear, and inguinal glands persist in spite of massive doses. Mucous patches and condylomata clear up readily without any other treatment. The drug has a splendid alterative effect and can be used for that alone in the course of syphilitic treatment. All patients, whether their lesions were benefited or not, speak of a sense of wellbeing, of added strength, of a better appetite, and even of an increase in weight.

On the rupia and tertiary lesions, sodium cacodylate has practically no effect."

It would be easy to submit evidence from a dozen different men of high standing who are enthusiastic advocates of sodium cacodylate, not the least important being, as Spivak says, that "it is nonpoisonous to the human system, even in doses as high as five or six grains injected daily for three weeks, even for a month."

It should be remembered in this connection also that salvarsan is no longer depended upon to cure syphilis. Given early, it may produce a negative Wassermann, but practically always the disease recurs in some form or other unless mercury is associated with the treatment. Therefore, salvarsan and mercury go hand in hand, and I do not know of a single syphilologist of distinction in this country who now depends upon salvarsan alone for perfect cure. The clinical benefits obtained from the use of salvarsan are analogous to those obtained from sodium cacodylate, although the effect on the Wassermann reaction obtained from salvarsan is much more pronounced than that from sodium cacodylate.

As an instance of the faith of one great man in sodium cacodylate, I am reproducing herewith [see next item] the article by Dr. John B. Murphy referred to in our editorial last month. This is the introductory article in the August, 1915, number of "The Clinics of John B. Murphy," published by W. B. Saunders & Co. Doctor Murphy's experience is probably as extensive as that of any man in Chicago—perhaps any man in the country.

We are sorry that we overlooked the advertisement of the Philadelphia arsenobenzol in the last number of CLINICAL MEDICINE. This shows that the editor does not himself read the advertising pages as closely as he should. We are glad indeed to note that American chemists are doing this work, and so far as possible we are glad to support them. We sincerely hope that every reader of these pages who is in need of this preparation will get into touch with the manufacturers, whose advertisement appears again in this issue of CLINICAL MEDICINE, page 43.—Ed.]

A TALK ON SYPHILIS

[EDITORIAL NOTE.—The following talk on syphilis is reprinted from the August, 1915, number of "The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago." This is a bimonthly publication issued by the W. B.

Saunders Company of Philadelphia. The talk which follows is the first article in the number referred to. It is reproduced in its entirety because of the interest now being displayed in sodium cacodylate.]

—

DR. MURPHY (October 8, 1914): We have two very interesting cases that came into the office yesterday. The first is that of an engineer who contracted a chancre of the tongue, at its middle, from smoking a pipe that had been used by his syphilitic fireman. At the time of his first visit, eight days previously, we immediately scraped his tongue, excised a piece, and stained for spirochetes, the detection of which confirmed the diagnosis. Then we instituted what we believe to be the best method of treating early syphilis, namely, daily hypodermic injections of sodium cacodylate. I recently recommended salvarsan, but I have returned to my first love, which I originally suggested and used before we had '606.' Upon his return yesterday the chancre had shrunken to one-sixth of its original size. I know that it will be healed when he returns for the next visit, six days hence, allowing just two weeks from the time of the original sodium cacodylate injection to that of complete healing. Usually chancrea heal within from six to seven days, and much faster with sodium cacodylate than with salvarsan. The speed of repair is accelerated by putting chrysolate of argyrol over the surface of the sore at the first visit. Owing to the great increase in the price of salvarsan, from \$30.00 to \$35.00 an ounce, I think sodium cacodylate is the therapeutic agent of the future. Fifteen cents' worth is sufficient to cure a chancre.

"We are very much impressed with the rapidity with which the primary lesion is healed by sodium cacodylate. As to the permanency of the cure, we are not so certain, but we know that '606' has been a failure as regards permanency of cure and a great disappointment.

"The second case was that of a doctor who, despite an abrasion on the back of his finger, examined a patient with ungloved hand and contracted a typical chancre. He will likewise be treated with sodium cacodylate, beginning with two grains hypodermically. Unfortunately, his disease is in a much later stage, because the eruption is just commencing to appear. The drug will be rapidly increased up to five grains a day in an endeavor to prevent involvement of the central nervous system.

"There are some peculiarities about the locality of the primary lesion in these syphilitic infections that lead to very serious sequelae. When the chancre involves the prepuce, the central nervous system is invaded much later than when the chancre is situated in the rich vascular tissue of the urethra. For instance, if in the presence of gonorrhea a chancre develops in the urethra, the syphilitic infection is by far more liable to involve the central nervous system early. So common is this that we never analyze a case of this class with a history of gonorrhea without exacting all the details of the attack if there is anything in the patient's make up that arouses a suspicion of syphilis, because when the chancre locates in the urethra, the spirochetes never of themselves give rise to the pronounced lymphatic infection and the adenopathies. Furthermore, the cutaneous eruption is conspicuous by its absence. Patients with the urethral portal of entry never have alopecia as a secondary sign. Why? Because with a specific infection of the urethra the spirochetes enter the bloodstream directly, and not through the lymphatics to the bloodstream. The anatomic reason is that the urethra has no submucosa; it has a basement membrane, but no submucosa. It has just a vascular network on the corpus spongiosum, so that the spirochetes enter the blood directly, and the syphilitic infection first manifests itself by a central nervous system lesion. For example, we had a man here the other day from Albuquerque, New Mexico, who positively denied any infection, but who had a urethral discharge which had been prolonged, but at no time profuse. Get the idea!—prolonged, but not profuse; it was the urethral spirochetic infection that caused the slight discharge and minimal irritation, which continued for a long time. He came in with a cerebral thrombosis developing after an epileptic attack. He gave a quadruple plus Wassermann, without anything at all suggestive in the history. Think of it! This emphasizes the clinical course of primary urethral chancre infections.

"VISITING DOCTOR: How long after the appearance of the initial lesion do you give the sodium cacodylate?

"DOCTOR MURPHY: I give the sodium cacodylate immediately after the appearance of the initial lesion, and keep it up until the external manifestations have entirely disappeared two weeks, three weeks, four weeks. First we commence with two grains once a week, always starting with the smaller

doses. Why? Because some patients have an idiosyncrasy to arsenic. This has been known as long as arsenic has been known. If the idiosyncrasy is marked, it gives the patient the garlic breath. If there is no idiosyncrasy, the drug is pushed up to five grains.

"The sodium cacodylate is marketed in ampules. We never mix it ourselves, and never let the druggist mix it. We have not given it intravenously: perhaps that will be done. Nothing is more beautiful than the healing of a chancre by sodium cacodylate. We used it before we had '606.' In one of my original articles I cited the case of a girl who had been infected from a drinking-cup, developing a chancre on the lip, which, under sodium cacodylate, healed completely in eleven days.

"If we can cure the primary lesion in six, eight, or ten days, the syphilis problem is mastered. Why? Because the danger of transmission is thereby minimized. It is from the primary lesion and the secondary manifestations and discharges that contagions occur. We can have the chancre patients arrested and detained in the hospital for a week or ten days, but they cannot be forced to quit business for twelve weeks or more, as was necessary for healing in the old treatment. That is the way the problem is going to be solved.

"The question as to whether sodium cacodylate permanently cures each individual is not so paramount as the knowledge that it is the factor that puts him in dry-dock while the danger of transmission is active. It is the healing of the primary sore that stops the transmission and that can be done very readily."

A CONGRATULATORY LETTER. SAL-VARSAN AND SODIUM CACODYLATE

Whenever I receive the pink slip with my journal I always feel much as I do when I have a very serious patient—that I am afraid I am going to lose a friend. However, there is one redeeming feature about the journal—I can call it back to life with the necessary "long green." I want to say that CLINICAL MEDICINE for May was a "headliner."

In your editorial "Making the Patient Comfortable" you have spoken a world of truth. Every young man should have a copy of this article, and some of the old men that I know need it badly.

Since salvarsan is not obtainable I have

been using sodium cacodylate and have had some marvelous results.

In the injection treatment for hemorrhoids, Doctor Morley makes it plain enough for almost any tyro to tackle the operation. I have used the same method for more than three years and find it all that is claimed, and I agree with Doctor Morley that it is not used enough by the regular men and the patients drift into the hands of the quack who is shrewd enough to realize the value of the method.

I am not trying to write a paper nor to be a critic, but I must let you know how much I appreciate CLINICAL MEDICINE. I have heard it said that even an editor needs encouragement. All in all, the May number is the best yet. I have never seen so much that is helpful in one number before.

H. D. LEH.

Lancaster, Pa.

SODIUM CACODYLATE: THE QUESTION OF PRIORITY

I notice in your valuable journal of May, 1916, you give credit to certain Chicago men because of their clinical priority in the use of sodium cacodylate in syphilis.

Some years ago I had the pleasure of receiving a letter from Doctor Spivak of Philadelphia, congratulating me because of my priority in publishing a few sentences upon this valuable drug in syphilis in your journal—about 1908 I think. Doctor Spivak at that time, he gave me to understand, had about 80 cases upon which to report. I did not have that number.

With all due respect to Dr. John B. Murphy *et al.* I am sure you have "slipped a cog" in proper recognition both as to originality and priority.

According to Doctor Spivak, I am quite sure I did mention the use of sodium cacodylate in syphilis prior to its recommendation by Doctor Murphy.

W. C. GREENWALD.

Cleveland, Ohio.

[Doctor Greenwald's brief article in CLINICAL MEDICINE, to which he refers in this letter, was published in the issue of May, 1910, page 546. On referring to this I find that he speaks of Murphy's prior employment of sodium cacodylate, which led him to try the remedy in one case. This seems to settle the question. Doctor Greenwald's article was certainly the first on the topic appearing in this journal, and one of the first

published in America. Since it appeared a large number of clinicians have been working with this arsenical salt.—ED.]

PATHING THE PATIENT IN BED

On this page of CLINICAL MEDICINE, we are reproducing a photograph which appeared originally in *The Nurse*; this being one of a group of pictures, printed in that excellent publication, which illustrate the method of bathing a patient in bed. We show it here, because we believe physicians should know more about the practical "kinks" of nursing, especially since—in country districts at least—many physicians have no trained nursing-help available.

As you may see by this photograph, special bathing facilities are not necessary in order to give a patient sick with typhoid fever or any other serious illness a full tub-bath. In fact, this bath can actually be given in the patient's own bed. All that is necessary is, a rubber sheet, which with a little ingenuity can be placed under the patient without his being lifted out of bed, then the edges can be raised by putting under this rubber sheet rolls of blankets, so that the patient will lie in the depressed portion, with high edges all around, as shown in the picture. Then the bed can be filled up with water of the desired temperature. In this position, also a sponge-

bath or spray can be applied, as shown in this picture. When giving a cold bath, it should be remembered that friction should always be applied. Cold compresses are usually applied to the head.

THE INJECTION TREATMENT OF HEMORRHOIDS

CLINICAL MEDICINE is one of the most practical and helpful medical periodicals in circulation, and I find many splendid articles therein.

Since there is such an interesting discussion of the injection method for the treatment of hemorrhoids, I wish to say that it is a splendid method. To learn all about its precautions and its origin it is well to get the book by Dr. W. P. Agnew of San Francisco. It tells all about it.

G. C. WILKE.

Fort Collins, Colo.

[We have been much impressed by the revival of interest in this method of treatment in England. An abstract of another article on this topic will be found in the "What Others are Doing" department, this issue. See page 521.

Doctor Agnew's book on "Hemorrhoids and Other Rectal Diseases," to which Doctor Wilke refers, was published about twenty-five



Showing How Patients May be Bathed in Bed

years ago, and we believe is now out of print. We have a copy in our library, which we value highly, although the technic of the injection treatment has been considerably elaborated, and perhaps improved (this is a matter of opinion) since it was written. Agnew used a 50 percent solution of carbolic acid, his formula being as follows:

Acid. carbol. cryst. oz. 1
Aqua dest. drs. 2
Sod. bibor. et plumb. glyc. drs. 6

M. Sig.: Solution for hemorrhoids.

The "sod. bibor. et plumb. glyc." in this formula is a mixture of equal parts of lead acetate and borax, two drams of each with one ounce of glycerine. After mixing it must be allowed to stand for twenty-four hours, although solution is facilitated by putting the vial containing the mixture in a water bath. Whether it has any advantage over those used by Morley and others is a matter of opinion; however, most operators now seem to prefer a weaker solution—20 percent phenol seeming to be about the average.—ED.]

AN EXCELLENT ANTISEPTIC IODINE COMBINATION

In view of the controversy in medical journals regarding the value of antiseptics in the treatment of wounds, I venture to submit to the members of the "family" my formula for an antiseptic combination that I have been using more or less for the last fifteen years.

I triturate in a glass mortar 30 grains of iodine crystals with 1 ounce of phenol-camphor until complete solution is effected and then add 1 ounce of compound tincture of benzoin. Then it is ready for use.

For badly infected sores, I employ this mixture in full strength; however, in milder cases or as a preventive of infection, I dilute it with olive-oil. In chronic indolent sores, such as leg-ulcers, I add balsam of Peru. To make it into an ointment, I evaporate the alcohol from the tincture of benzoin, while for the ointment-base, I use a mixture of 3 parts of woolfat, and 1 part of petrolatum.

The advantage of this combination over Carrel's hypochlorite solution, is that it is more effective as an antiseptic and the effects are of much longer duration. It is absolutely non-poisonous and also nonirritant. It is a superb analgesic and promotes healing better than any other antiseptic I know of.

One strong point in favor of this combination is the protective coating which it affords. The original purpose of adding the compound tincture of benzoin was for this very protec-

tive quality, although I soon discovered that it amazingly improved the healing action of the mixture.

To demonstrate its healing effect, just try it in the following proportions in a case of chronic leg-ulcer:

| | |
|----------------------------------|---------|
| Iodine crystals..... | grs. 30 |
| Phenol-camphor. | oz. 1 |
| Balsam of Peru..... | drs. 4 |
| Tincture of benzoin, compound .. | ozs. 2 |
| Olive-oil, enough to make .. | ozs. 6 |

Directions: Apply once daily on gauze and over it apply an elastic bandage without rubber.

For punctured wounds of the palms of hands and soles of feet, with a sharp knife trim the thick skin down to the quick around the edge of the wound; then with a good medicine-dropper inject a few drops of anesthaine. Clean the wound out with a solution of peroxide of hydrogen, after which inject some of the undiluted iodine-phenol-camphor solution. The wound may then be dressed with the dilute oil mixture, and it will give no trouble whatever. There is no need to fear tetanus.

In cases of small wounds of the face, I make the necessary repair and then paint the wound several times a day with the undiluted solution, leaving it open, without any other dressing. Healing is very rapid, with a minimum of scarring.

In the treatment of crushed and lacerated wounds of the hands and fingers, the preparation can not be excelled, as here its analgesic qualities make it indispensable, after once having been tried.

W. A. MARNER.

Miles, Iowa.

EXPERIENCE WITH THE CURLE TUBERCULOSIS TREATMENT

I wish to tell of my experience with the Curle treatment of tuberculosis. I first tried the method on an important case after I had read about it in the January, 1914, number of CLINICAL MEDICINE. This patient was benefited, and the disease-process stopped.

Recently I have employed the method in a case of tuberculosis of the advanced miliary type, made worse by pregnancy. The woman was confined February 14, and pursued a downward course from that time on. She died on April 19, a result that I anticipated. In spite of the desperate character of this case, the patient experienced a slight increase of appetite and the looseness of the bowels was checked. She did not last long enough after this treatment was instituted, however, to experience much benefit.

I shall try the Curle treatment again whenever an opportunity presents.

LUTHIER WALL.

Slaton, Texas.

[The method of treatment to which Doctor Wall refers was introduced by Doctor David Curle, of Glasgow. The purpose of the treatment is to throw free iodine into the blood of the patient. This is accomplished by giving potassium iodide by the mouth, the dose being 30 grains, administered in 5 ounces of water after breakfast in the morning, washed down with clear water. To break down the potassium iodide in the blood, with release of free iodine, an oxidizing agent is used, chlorine being employed for this purpose. Three to four hours after taking the potassium iodide the patient is given one ounce of freshly prepared chlorine solution diluted with 9-ounces of lemonade. This chlorine lemonade is repeated at two-hour intervals until (as a rule) three doses have been taken. This is the daily treatment.

This method of treatment was highly lauded by Curle, and was praised by Reeve and others. Little has been written about it in this country, and we have received but few reports from our readers, so we are not prepared to praise or condemn. However, we have much faith in iodine. It undoubtedly has distinct value in tuberculosis, and we know of many physicians who have used it in some form—calx iodata, for instance—with much satisfaction. In combination with such remedies as guaiacol, nuclein, and the like, it has seemed to us to promise much. The Curle method of treatment rests upon a perfectly comprehensible hypothesis. If other readers of CLINICAL MEDICINE have had experience with it, we shall be glad to hear from them.—ED.]

A DOUBLE MONSTER

Our old friend Doctor Laura M. Plantz, of Putney, Vermont, has sent us a photograph of a double monster, born in Gallipolis, Ohio, March 20, 1916. The parents were James Beckett, a laborer, age 64, and Nancy Mourning Beckett, age 42. They had twelve children, five of whom are living. The attached twins, whose pictures are shown herewith, were both females, their combined weight was 15 1-2 pounds, and they lived about twenty minutes. Doctor G. A. Mack, who attended the mother, wrote as follows:

"The chests were separate, the abdominal organs coalescing, particularly the livers

and stomachs, forming one liver and one stomach for both. The mother made a nice recovery, and was out of bed on the ninth day."

DOCTOR BOWERS' BOOKS FREE

Send 5 cents in postage stamps and receive free copies of two valuable books, one on "Diet" and one on "Beauty," which Doctor Bowers has written for *The Associated Sunday Magazine*. These books would ordinarily sell for 50 or 75 cents apiece. Address Bruce Barton, Editor *Every Week* magazine, 95 Madison Avenue, New York City.

NASAL OBSTRUCTION: RISING TO THE EMERGENCY

Several days ago, a man in an excited condition hurried into my office and reported that his little son had a button stuck in one of his nostrils. Immediately I was reminded of an experience I had about twenty years ago. At that time, I was in a drugstore when I was called to see a child, about three years of age, troubled in the same way. Looking up the child's right nostril, I discovered there a shoe-button firmly impacted, but could not remove it in the usual way. So, I told the father to hold the child in his arms while one



A Double Monstrosity

of my friends held its head. Then I pinched the child so that it cried lustily, whereupon I applied my mouth to the child's mouth and vigorously blew into it, with the result that the button flew out from the nose.

Remembering this experience, I submitted this child to the same treatment and promptly secured the same result. This child had a similar experience about a year before, but, as I was not at home, the father went for a local colleague who specialized in diseases of the eye, ear, and nose. He failed to remove the button, whereupon the family took the child to their own physician in New York. That gentleman etherized the infant and pushed the button back into the pharynx.

There is a knack in "doing things" without instruments. I have exercised a similar knack in examining the vagina. I have used a large tablespoon, bending it so as to make it a very passable speculum.

A. J. ANDERSON.

Astoria, N. Y.

THAT UNFORTUNATE ADDICT

Concerning the case of the unfortunate physician referred to, by "H., Missouri," in the May number of CLINICAL MEDICINE, there is only one course for him to pursue. He should go to the Internal-Revenue Collector of his district, state his case as it is, and get permission to use whatever amount of morphine is necessary. This permission will be granted. The amount of the drug necessary to hold him in comfort will not have to be increased, and he will improve in health and possibly be able to return to his work once more.

It is a great mistake to withdraw the drug from these chronic addicts. The Harrison antinarcotic law was not designed to apply to this class of cases, but to prevent the illegal sale of narcotic drugs and prevent the making of new addicts. It is being enforced in a thoroughgoing manner, and will, in one generation, wipe out the wrongful use of the drugs named in the measure. If it could be applied to the sale of alcohol and tobacco, it would go far toward checking the degeneration of the race that is shown to be going on in all the highly civilized (?) countries.

I have a woman patient who has been using morphine for 41 years, beginning, at the age of 14, for a chronic affection. She came under my care seventeen years ago and at that time was taking about 600 grains of morphine each month. I reduced the amount gradually to 480 grains, which was the least

that would hold her in comfort. During these seventeen years, this woman has never asked to have the amount increased. She has been able to attend to her family and social duties and today, at the age of 55, is in fairly good health.

CHARLES G. PURDY.

New York, N. Y.

DEPARTMENT OF EXTENSION

The doctor often finds himself confronted by the duty of instructing his patients concerning the preliminary care, the management, and the after-care of the isolation room. A great deal of time is consumed in imparting this instruction to the patient or attendant. The following article will conserve the physician's time. More important, however, is the fact that it will increase the efficiency of management of the case. No matter how well the doctor may explain the details of sanitary conduct of the quarantine, the patient may fail to grasp the instructions.

These printed instructions (which may be reprinted in leaflet form by anyone) enable the doctor to avoid omitting essentials, they guarantee that the patient will not forget, and they save time.

Care of the Sick-Room, and How to Fumigate It

It is prudent to disinfect or at least cleanse every sick-room at the termination of the illness. The method used must be decided upon by the physician, who can take into account the nature of the disease. If the room and its furnishings have been selected with foresight, the removal of all danger of contagion is a simple matter. It is, therefore, wise to anticipate the day of fumigation by contriving that the sick-room shall contain nothing that is hard to disinfect and be located appropriately.

While the law does not require a quarantine in the case of all communicable diseases, the directions given below are intended for the quarantined sick-room or isolation-room.

The room selected for the patient should be as remote as possible from the other used portions of the house—a room at the end of a hall or off in an "L" is suitable.

The patient often is able to wait on himself, especially during the latter part of the convalescence. As a rule, however, an attendant, preferably a trained nurse, is required. Since the patient and attendant must remain in the isolated room at all times, it is highly advisable to have a bath-room adjacent to the sick-room.

The floor and walls of the room should be bare, and no curtains should be used except washable ones. Upholstered furniture and cushions should be eschewed. The room should be capable of being closed tight; hence, rooms opening off through open archways into others rooms are not appropriate.

It depresses a patient to listen to a discussion as to where or how he is to be isolated. In his

hearing, conversation should be limited, if possible, to a discussion of how to make him comfortable, rather than how to protect the health of others.

Even during isolation, it is necessary to arrange for the ingress and egress of certain essentials. Food can be carried on a tray or plate. After meals, the tray can be placed by the nurse in a dishpan left for the purpose outside near the door. The dishpan can then be filled with water and set on the stove; and after the water boils the utensils may be handled safely.

The well members of the family should not use the bath-room adjacent to the sick-room. In small households, where there is only one bath-room, it can, by proper precautions, be made to serve. The seat of the toilet should be washed with an antiseptic solution after being used. The tub should be reserved either for the sick or for the well. All who enter the bath-room should regard it as neutral territory and should carefully avoid touching anything with the fingers.

The sick-room should be cleansed by some dustless method. Mopping the floor with a mop wrung out of antiseptic solution is one satisfactory way of cleaning the floor. The furniture, door-knobs, window-sill, and the accessible portions of the woodwork should be rubbed with an oiled rag or with a rag moistened with an antiseptic solution. Cloths moist with kerosene are excellent.

The bed-linen should be removed with the minimum amount of waving through the air, and, together with the personal linen, should be placed into a clean pillow-slip. The laundryman or wash-woman should be instructed to soak the pillow-slip in boiling water for five minutes before removing its contents.

The antiseptic solution used for wiping off chairs, doorknobs, etc., should be one of the following: Corrosive-sublimate solution, 7 grains to 1 quart of water; solution of pure carbolic acid, 2 teaspoonfuls to 1 pint of water; kresol solution, 2 teaspoonfuls to 1 pint of water; formaldehyde solution, 3 teaspoonfuls to 1 pint. Either of these solutions is effective. The bichloride solution is odorless, but poisonous. The formaldehyde solution irritates the eyes and should not be used in the sick-room. The kresol solution has some odor.

When the day for releasing the quarantine arrives, the fumigation can be conducted with very little difficulty if the foregoing instructions have been carried out.

The patient's clean clothing should be placed outside the sick-room. The patient should then take a careful sponge-bath with a corrosive-sublimate solution of 7 grains to the quart of water. The hair should be thoroughly soaked in this solution. The entire body should then be rinsed off in pure water. The patient, leaving the sick-room without touching anything, should put on clean clothing, then go where he will.

The nurse or the attendant should then attend to the disinfection or purifying of the room by one of the several methods given below. The selection of the chemical to be used should, of course, be left to the physician; but, regardless of which chemical is used, the room should be prepared for fumigation as follows:

The floors should be mopped thoroughly with corrosive-sublimate solution (7 grains to the quart of water). The mattress should be wiped with a rag wrung out of this same solution. The blankets should be hung on lines or on the bed, so that they hang free of folds and wrinkles. The closet-door

should be opened and the dresser-drawers pulled out, and all articles of clothing hung up on lines. Furniture and woodwork should be gone over with a cloth wrung out of the bichloride solution mentioned above. The floor should be sprinkled with water. Books are not easily disinfected, and they should not be used after having been in the isolated room. Valuable books, however, need not be destroyed, but should be disinfected in a small airtight box, by means of a concentrated vapor. The book should be stood on end and the leaves separated one from the other.

Before starting the fumigation, the room should be made as nearly as possible airtight. Wetted strips of newspaper 6 inches wide will adhere over the cracks around the windows and doors. Chimneys can be stopped by stuffing in newspapers. Keyholes can be stopped with cotton. The chemicals chosen by the doctor should be at hand ready to release the vapors for fumigation. Either one of the following may be used:

1. Solidified formaldehyde method.—This is economical and safe, but only reliable goods should be used, preferably those endorsed by the state board of health. To ascertain the cubic capacity of the room, multiply the length and breadth of the room (expressed in feet); then multiply this product by the height of the ceiling (expressed in feet). The result will be the number of cubic feet in the room. Place the formaldehyde-lamp of the required size in a tin or iron pan on a brick near the center of the room. Light it, then leave the room at once, closing the door behind. Seal all cracks around the door with strips of wetted newspaper. Leave the room closed for six or eight hours, then open the doors and windows and air the room for at least twelve hours before occupying it.

2. Permanganate-formaldehyde method.—Reliable, but expensive. It takes 6 1-2 ounces of permanganate of potassium and one pint of 40-percent solution of formaldehyde for each 1000 cubic feet of air space. After calculating this, as described above, place the required amount of formaldehyde in a large metal bucket, can or small tub capable of holding 8 times the quantity of formaldehyde used. Support this bucket or tub on two bricks near the middle of the room. Prepare for a hurried departure. Then pour the permanganate into the formaldehyde-solution, get out quickly, shut the door behind you, then seal with strips of wetted newspaper. Leave the room sealed for six or eight hours. Then open doors and windows and air the room for twelve hours, or until all irritating fumes have disappeared, before occupying it.

3. Sulphur method.—This is cheap, but the sulphur fumes bleach fabrics and tarnish metal objects, such as picture-frames, brass beds, etc. Calculate as above the cubic capacity of the room. Use 5 pounds of roll sulphur to each 1000 feet of air space. Place the sulphur into one or more ordinary iron pots supported by bricks. Pour half a teacupful of wood-alcohol over the sulphur, ignite with a match. Leave the room at once, and seal the door with strips of wetted paper. Leave the room closed for six or eight hours, then open doors and windows and air the room for twelve hours before occupying it.

The attendant should take a bichloride-solution bath as described for the patient. This can be done either just before mixing the chemicals and starting the fumigation, or it may be done outside the sick-room and the clothing placed in a clean pillow-case, to remain unhandled till boiled.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

A FEW talented physicians in the United States are endeavoring to show the people how the best health can be secured and maintained and how the everyday ailments of life can often be prevented or cured by good and careful living. Good and careful living, of course, includes all such subjects as diet, personal habits, clothing, exercise, work, play, rest, recreation, and so on; and now, in addition to his excellent works on sex-hygiene, Dr. William Lee Howard, through his publisher, Edward J. Clode of New York, brings out one of the most practical and interesting books I have had the pleasure of reading, entitled, "Breathe and Be Well." Doctor Howard says, in his foreword:

"Optimism means to me humanity. To be impatient with humanity, is stupid pessimism. I have no warfare against those who have neglected their latent physical forces, but an urgent desire to show them how to use and conserve these powers and forces. The general public are not upon familiar terms with their bodies. They are better acquainted with diseases than with health. Poor health, in distinction from disease, is almost invariably due to lack of understanding that the body is a machine which must have proper fuel for combustion, and its boilers, pipes, and exhausts must always be kept clean—that oxygen must be supplied in sufficient quantity, must burn up waste material every living minute as well as supply energy and new living stuff. The secret is, in knowing how to enlarge the combustion-chambers and control intake and outgo."

How true is the saying of Doctor Howard: "The general public are not upon familiar terms with their bodies. They are often better acquainted with diseases than with health!"

Many contributions by physicians to newspapers and magazines describe the signs and symptoms of diseases, leaving as untoward suggestions on the layman's mind as will a patent-medicine advertisement. And it is refreshing to read a book so full of common sense and practical value as this work of

Doctor Howard's. No gruesome, terrifying descriptions of diseases that should be discussed only in the seclusion of a doctor's office, but simple rules, which, if followed, will aid mightily in keeping a person from getting sick.

"There is scarcely a disease that does not have its enemy in the blood or lymph—an enemy ready to war and overthrow the host of disease-germs," writes Doctor Howard, "but, unless the roads and passes are clear and ready to the remotest organ or vessel, they cannot do their allotted work. Just because man has not kept clean and free the highways and byways in the body for his internal allies to march over when called, is the cause of disease. And these highways and byways for the host of fighting bodies to rush over only can be kept clear and free by knowing how to breathe."

One is reminded of the truth and force of Doctor Abbott's slogan: "Clean out, clean up, and keep clean."

It is not so much science that is needed to keep well and prolong life, as is the following of a few simple common-sense rules.

In "Breathe and Be Well," there are the following chapters, all free from physiological explanations and technical terms and details, but simply worded, understandable, and interesting.

1. General observations upon health.
 2. The morning fresh-air cocktail.—The nightcap.—How to breathe them in.
 3. The little things that prevent proper breathing.
 4. Snoring: The cause and cures.
 5. Breathing for beauty.—Breathing and eating.
 6. Breathing through the skin necessary for health.
 7. New tissues for old.—Rejuvenating the body and skin.
 8. Some simple breathing-exercises.
- There is much more to this book than one would judge from its title. The book closes

with a quotation from the Sanskrit, answering the question, "What is Life?" He says:

"Life is the interval between one breath and another—he who only half breathes only half lives, but he who uses nature's rhythm in breathing has control over every function of his being."

After reading Doctor Howard's book, one can readily believe that the old philosopher who wrote the foregoing words was right.

Biliousness, dyspepsia, neuralgia, nervousness occasion, perhaps, three-fourths of all the sufferings endured in civilized society, all arising from chronic ailments; that is, ailments which last for months and years, sometimes being better, sometimes worse. It is almost impossible to enter any household and not find one or more of its members suffering to a greater or less extent from one of the forms of sickness named.

It has been shown indisputably that, although the effects of these four ailments are very different, the immediate cause is in the blood—blood which is imperfect, impure, unnatural to the system, and, hence, must injure it; the cause being one, however different may be the effects in different constitutions. That cause must be removed, as an essential and the very first step toward a cure; and its removal must be followed, sooner or later, by the disappearance of the effects in all cases where these effects have not been allowed to remain long enough to produce actual disorganization of some of the parts affected or long enough to exhaust their vitality, their power of recuperation, such as cancer of the stomach, the liver, the bowels or other part connected with the digestive process.

Then, again, the cause being one, the method of removal will apply to each of the four ailments named, although this removal of the one cause may be accomplished in various ways. In other words, if "bad blood" causes biliousness, dyspepsia, neuralgia, nervousness, these maladies, as also their effects, will be removed by whatever rectifies this bad blood; that is, it removes and supplies a good, pure, healthful, and life-giving material in its stead.

Bad blood is unnatural to the body; it is essentially a foreign body; and it is physiologically impossible to introduce a foreign body into the living human body without its making instinctive efforts to cast that foreign body out of itself, and it always

puts forth all the power it is capable of exerting to effect such a result. Not only so, but it is beautiful to contemplate that, when a foreign body is introduced into the system or when anything in it becomes foreign—such as impure air or food of which it can not make a healthful use, by reason of its being improper in quality or quantity—the system seems to become alarmed and, ceasing some of its ordinary work, it concentrates its energies toward the removal of this foreign body, this internal enemy.

For example, if a man eats too much, he either becomes "sick at stomach" and nature summons all its energy to enable him to vomit it up and cast it out in disgust or, drawing fluids from certain reservoirs of the system, dashes them in upon the bowels in unusual quantities, to flood away the offending mass, and in this we have the friendly diarrhea, which many ignorantly "stop" and thus oftentimes thwart nature, and by so doing destroy life in a few days. There is something similar in the intelligence of the little busy bee when any "foreigner" enters its hive.

In the case of the human body, it has already been shown that, when anything foreign is to be excluded, ordinary work is suspended until the work of exclusion is completed; hence, the weakness which follows diarrhea and many other forms of disease; it is because nature has summoned extra efforts to its aid, that it requires rest, and time for recuperation. Our highest wisdom in the treatment of all diseases is, to discover what nature wants to do, then to help it in the work and finally to do what is possible to recover from the greater or less exhaustion occasioned by the extra efforts toward protecting, defending, and recovering its normal strength.

When food has become a foreign body in the stomach, by its remaining there undigested, the appetite is taken away, as if nature foresaw that its strength ought to be husbanded, for the purpose of being extended on the extrusion; instead of asking for more food, which would require additional power for digestion. It seems as if a living and reasoning intelligence were being called into requisition in these cases, in so beautifully and wisely adapting the means to the end.

In reference to the existence of bad blood in the body as foreign matter, two things are

essentially necessary to the recovery of health, as has already been explained. First, the bad blood must be got rid of; second, a pure material must be substituted.

It has also been shown to be a ruling principle in the living organism that, when there is any foreign substance in the body, the action of every limb and muscle and fiber tends to work and push that foreign substance outward, whether it be undigested food, a bullet, a needle or bad blood; for, all are alike unnatural and foreign. Hence it seems to follow naturally that, as a means of helping nature, we should increase the action of limb, and muscle and fiber, by going to work, if you please—in moderation, of course; or, in the event of having nothing to do, to take certain exercises. And, as the muddiest spring will run itself clear, so the body will clear itself of its bad blood, in most cases, if not interfered with, by means even of involuntary motions and operations of its internal machinery; but much sooner if these involuntary movements are aided by voluntary exercise in the open air and proper breathing, as recommended by Doctor Howard.

And, if these things work the bad blood of biliouness out of the system, they will do the same thing in the case of many other ailments—showing that there is a certain unity in disease as well as a unity in the means of cure.

There is a great variety of ailments, an infinitude of combinations of symptoms, which would appear hopelessly complicated; but to the professional mind they are promptly classified and often traced to a single cause—to the wrong action or the want of action in a single organ. However, by rectifying that condition, a host of symptoms will promptly disappear. Hence, the cause may be one, the effects various; but the one remedy, by removing the one cause, may cure a dozen or more of the symptoms of the one disease.

It is the physician's duty to enlighten the public regarding every phase of hygienic living.

Marfan, in a very fine leaflet devoted to the etiology of mental work, has well analyzed social influence. "In contemporary society," he wrote, "the frequency and intensity of mental work increases daily. In the surroundings in which we live everything contributes to fatigue of the brain." Then he shows how the progress of individualism and the spread of education have enlarged ambi-

tion, and he emphasizes the pernicious influence of competition. "The multiplicity of competitions enables us to attain a position through competition only at an advanced age, which involved a prolonged effort, useless and barren for society." He attributes an important role to the development of printing, to the daily papers and to novels, which multiply the emotions and irritate the sensibility." And he concludes: "In subjects exhausted by heredity, these social conditions generate a variety of morbid conditions, especially neuroses and insanity." Camus and Pagniez, of France, have gone into this subject fully, and they write as follows:

"It is very difficult to indicate the prophylaxis for such conditions; but, if it is impossible to regulate individual work, nevertheless, general measures can be taken to decrease overwork, principally by aid of government and large corporations. Efforts have been made with this end in view, and it is to be hoped that they will completely succeed, for, it involves a matter of general interest. Among the laboring classes, the overwork that is forced upon them is frequently a cause of nervousness, directly for those subjected to it and indirectly to children.

"Working women who have been treated in the wards of Pinel have afforded us many sad examples. During certain periods of the year, these unfortunates were obliged to work a great part of the night and their meals were frequently very irregular; we know some who were obliged to lunch sometimes at one o'clock, sometimes at three, and frequently without interrupting their work; others left their workshops at nine o'clock in the evening, returning home without having dined. Exhausted from fatigue, they did not have courage to prepare the evening meal and went to bed, taking a little cold food. They could not long resist this anti-hygienic existence. Upon the advice of parents or friends, they changed their position, but it did not take them long to perceive that their condition was not improved. They were certainly free to accept or refuse offers of work, but it is a poor freedom which permits them to choose between misery and overwork. Their consent to this excessive fatigue does not make it legitimate, any more than voluntary slavery makes slavery legal.

"So, we, with many others, emphasize the influence for harm of overwork. This is not a digression; it belongs to medicine, pure and simple. When a physician is studying a disease, and recognizes the cause of the disorder, he should make it known and point out, if

he can, where the danger lies. That is all that we have done."

The physician, if he is a real physician and not simply a salaried man, must first endeavor to destroy the conditions which render his influence useless. He should act in behalf of the improvement of society, in the largest sense of the word, and not be content with showing the way; he should struggle ceaselessly and find a method of realizing the reforms he judges indispensable.

The first antialcoholic campaigns were received with smiles, and physicians themselves, well instructed regarding the ravages of alcohol the effects of which they see daily, did not regard the antialcoholic propaganda without a certain skepticism. Nevertheless, some of them undertook to direct the movement, and their efforts have been so successful that in certain countries alcoholism has been checked.

Overwork is a question quite as medical as alcoholism. The human organism, we have seen, may be compared in a certain way to an engine. The physiologist studies the combustion and the product; he estimates the quantity of food necessary for a given work, and when the work is increased he observes that the organism uses its own substance. The physician ascertains the effects upon the individual and on his posterity, and it is for him to say that the organism is working too much and it is bad.

Mosso, in his physiological study of fatigue, states that the division of work among men is too unequal and there is danger in this inequality both for the individual and for the race. "That does not concern," said he, "a question of party or a method of agitation; it is a profound conviction, a sacred sentiment of lofty morality which urges methods of studying the means for an equal division of property, without violence, without the shedding of blood, so that work might accord with the laws which govern humanity, so that the workman should not become the slave and be used up by fatigue, so that the human race should not degenerate."

These ideas are not new, but never has there been greater need to repeat them than in our epoch. They should be repeated by physicians and to physicians. The medical man's role in society is an important one. It is as if what he wishes may come to pass. His voice is always listened to. Perhaps he will succeed in solving in the name of hygiene and science what others from time immemorial

have tried to solve in the name of justice and altruism, in appealing with varied fortune to kindness or force.

Another point to be spoken of is work and rest.

Both business and professional men must realize that it is better to regulate their daily tasks with some regard for their nervous systems than to burden themselves with nerve-racking work for weeks and months until they are forced to take a rest. They ought to make it a rule to rest a little whenever an important task is accomplished, particularly after they have gone through a severe nervous strain. This applies to mental as well as physical work. Our strenuous life makes this imperative.

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If we save our nerves from overstrain, we are well equipped to shoulder its burden. It is the only way to counteract the severe nervous strain and responsibility entailed by some vocations. This advice will seem rational, no doubt, yet its efficacy depends on the exercise of a firm will, and that again depends on healthy nerves.

All changes from rest to activity or activity to rest, writes Dr. Meylan, medical director of the gymnasium of Columbia University, are made slowly when nature is allowed to have its own way. Attempts to change suddenly from inactivity to vigorous muscular work bring on severe distress of the circulation and respiration; rapid eating after a long fast inevitably results in acute indigestion; sudden awakening from sound sleep causes general discomfort; an abrupt change of temperature, such as occurs when jumping into cold water, usually brings on muscle cramps and occasionally causes sudden death.

Judicious regard for this physiological law is essential to physical well-being and efficiency. The common practice of taking a cold plunge-bath immediately after rising is absolutely contrary to the laws of physiology and hygiene. The effect of the cold water is, to stimulate all the body-functions to sudden and vigorous activity and also to dissipate temporarily the sensations of leftover fatigue not removed by sufficient rest. The exhilaration produced by the bath accelerates the expenditure of nervous energy for a few hours, but is followed by a reaction in the form of lassitude and depression. It is far better to allow the various body-functions to change gradually from the relative inactivity of sleep to the full capacity of work.

(To be continued)

Among the Books

HERTZLER: "SURGICAL OPERATIONS WITH LOCAL ANESTHESIA"

Surgical Operations with Local Anesthesia. By Arthur E. Hertzler, M. D. Second Edition. New York: Surgery Publishing Company. 1916. Price \$3.00.

For the general practitioner this is one of the most useful surgical books with which we are familiar. It is a volume to which every physician who owns a copy is sure to resort for information almost daily. No wonder that a new and larger edition has been demanded.

The first two chapters of Doctor Hertzler's book are devoted to a discussion of the drugs employed for the production of local anesthesia and the technic of their administration. Most attention is given to the use of cocaine, quinine and urea hydrochloride and novocaine, although other anesthetic agents, such as astrovaine, beta-eucaine, tropacocaine, and the like, are referred to briefly. In the discussion of the technic, details are given with great care. Not only is the physician told the strength of solution necessary, the syringes to be used, and how they are used, but he is also instructed as to the dangers of too concentrated solutions and of the symptoms of toxicity.

Naturally, a very large portion of the book is devoted to a discussion of the operations to be performed under local anesthesia, and the physician is told just how and where to use his anesthetic solution in the management of these cases. The book is one which can be heartily recommended, and it certainly deserves a very large sale.

"DIGS AT DOC"

Digs at Doc and Others. A Collection of Funny Sayings, Principally About the Doctor and His Profession. With 42 original cartoons by R. J. Bieger. Perth Amboy, N. J.: The Perth Amboy Evening News Co. Price \$1.00.

I will let you into a secret. This volume is made up of jokes, mainly about the doctor and his problems, and is collected by a good friend of many of the readers of this journal,

Mr. B. L. Maltbie, former editor of *The Physicians' Drug News*, and president of the Maltbie Chemical Company. There are a lot of things in this little book which will tickle your funny bone, and the illustrations by Bieger are mighty clever.

"EAT AND GROW THIN"

Eat and Grow Thin. The Mahdah Menus. With a Preface by Vance Thompson. New York: E. P. Dutton & Co. Price \$1.00.

Mr. Thompson's eloquent and witty preface to this book—which, as noted, fills about half of the book itself—starts off with a discussion of the "tragedy of fat." Fat must, indeed, be a tragedy—why else should, in the last few weeks, this book lead all other nonfictional productions among the "best sellers" of Chicago's bookstores?

And, by the way, not the least of the tragic part of fat is the treatment for getting rid of it, as given in this volume. For, what fat man or fat woman can contemplate the following list of forbidden food without being seized with anguish and horror; to wit: (1) pork and fat meat of all kind; (2) bread, biscuits, crackers, and anything and everything made from wheat, corn, rye, barley, or oats, including the inevitable breakfast-food; (3) rice, macaroni, potatoes, corn, dried beans, lentils; (4) milk, cream, cheese, butter, and everything made from them; (5) olive-oil or grease of any kind; (6) pies, cakes, puddings, pastries, custards; (7) iced creams, sirup-sweetened soda-water; (8) candies, bonbons, sweets; (9) wines, beers, ales, spirits.

Nor does this finish the tragedy. Listen: The fat man is strongly advised not to sleep too much; he must not take naps; must not overeat, even of these few dishes that are permitted; must not drink either with his meals or between the meals; must abstain from all alcoholic beverages; must eat no bread other than gluten-bread, and that only toasted; must shun potatoes; and, finally, whenever he feels inclined to ride in a cab he must reconsider and walk instead.

And these are the things the adiposely over-blessed may cautiously permit himself to eat,

for the purpose of prolonging his dolorous existence in this vale of tears: Lean meat, sea-foods, most kinds of fruit (except the sweet ones), salads (provided they are not made with the proscribed vegetables), besides a long list of green garden-vegetables. Incidentally, this happy personage is permitted to stimulate his jaded appetite with pickles and Worcestershire sauce.

Now, isn't this a pleasant program to mull over?

Mr. Vance Thompson, in his introduction, certainly does paint a harrowing word-picture of the horrors of the fat man's life, as vividly illustrated by this example:

He falls in love. (It is a destiny—like being born, with the sun in Aquarius; always the fat man falls in love.) And this is his bitterest tragedy. He cannot kneel at Beauty's feet, without a derrick to let him down; and a man who goes a-wooing with a derrick looks like a fool. He cannot clasp the dear girl to his heart—for fear of smothering her.

What can the poor man do?

Fierce burn the fires of love within him; but the fiercer they burn, the faster flees the terrified girl—for he looks like a vat of boiling oil; and that is a fearsome thing to fall into. So, wrapped in tallow, the poor lover goes his sebaceous way—wearing his maiden-aunt's bracelet for a ring.

Love is not for him.

INTERNATIONAL CLINICS

International Clinics. Edited by Henry W. Cattell, A. M., M. D. Volume IV, twenty-fifth series, and Volume I, twenty-sixth series. Philadelphia and London: J. B. Lippincott Company. Price \$2.00 per volume.

The first of these volumes opens with an interesting article on "The Coming of Age of Internal Medicine in America," by Sir William Osler, while Henry W. Cattell follows with a celebration of the centenary volume of "International Clinics," the first of which was published in 1891. This volume contains many fine papers. For instance, one by C. C. Douglas on clinical laboratory methods for the general practitioner; one by Brinck on the treatment of internal tuberculosis by means of absorbed light-energy; one on low blood pressure by Potter; one on the irregular heart, by Reilly; one on auto-intoxication, by Walsh; hookworm disease, by Deaderick; visceroptosis, by Hertz, and one on "My Method of Percussion" by Lerch. These are only a few of the many splendid articles in this volume.

Volume I of the twenty-sixth series contains among other papers one on chorea by Mayer and Mayer; one on drug therapy in

cardiovascular diseases, by Satterthwaite; on pellagra, by Tucker; "The Wounded Mind," by Murphy; public health administration, by Trask; prolapse of the genital organs in women, by Byford; inevitable abortion, by Nichols; surgical shock, by Foster; fractures of long bones, by Roberts; together with a general review of medicine for 1915 by Craig and Speese.

We have by no means exhausted the list of excellent articles in these two volumes, which are up to the high standard set by Doctor Cattell.

THOMSON AND MILES: "MANUAL OF SURGERY"

Manual of Surgery. By Alexis Thomson, F. R. C. S. Ed., and Alexander Miles, F. R. C. S. Ed. Volume I (General Surgery) and Volume II (Regional Surgery). Fifth edition, revised and enlarged. With 301 illustrations. London: Henry Frowde and Hodder & Stoughton. 1915. Price \$3.50 per volume.

This manual of surgery is one of the most convenient as well as one of the most comprehensive works upon surgery which have been issued in recent years. One objection to most books on surgery is that they are very large, very heavy—not easy to carry and not convenient to handle. The book by Thomson and Miles is issued in three volumes, each of the ordinary 12mo popular-novel size. They are printed upon relatively thin paper, permitting the inclusion of from 800 to 900 pages in each volume.

Volume I deals with general surgery, volume II with regional surgery, and volume III (which has not yet reached us) with operative surgery. The final volume will give the technical details which are largely omitted from the first two.

For clearness of diction and for accuracy of statement, it is very hard to find a work on surgery which covers the ground more thoroughly than this one. Also, it is exceedingly practical and as nearly up to date as any book of the kind can be. For instance, the chapter on syphilis, in the first volume, describes the use of salvarsan and neosalvarsan, but devotes most attention to the mercurial treatment. More than ordinary attention is paid to the common, everyday surgical diseases with which the general practitioner has to deal. In the chapter upon military surgery, the authors wisely state that "many principles of military surgery are in process of solution and it will only be possible to formulate definite opin-

ions when the varied experiences of the European war have been collated." All things considered, the book is a most worthy one, and it gives us much pleasure to recommend it to our readers.

BOWERS: "SIDE-STEPPING ILL HEALTH"

Side-Stepping Ill Health. By Edwin F. Bowers, M. D. Boston: Little, Brown, and Company. 1916. Price \$1.35.

This is a book for laymen, written by a doctor who has contributed so frequently to the lay magazines that he knows pretty well what the average man wants to know about the ills that our human flesh is heir to. In this book he takes up the common, ordinary, everyday health problems, such as overeating and undereating, constipation, coughs and colds and their cause and simple methods of treating them, "that tired feeling," headaches, insomnia, neuralgia, falling hair, too much fat, rheumatism, and common ocular troubles. The chapter entitled "Stamping Out Typhoid" is a brief but well-digested account of the wonderful work accomplished in the United States Army by Major Russell and his associates. Chapter sixteen, "Making Loose Teeth Tight," explains the emetine treatment of pyorrhea. This chapter was published some months ago in *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*, and is therefore known to our readers.

This outline gives in brief some idea of the nature of this interesting volume, which any doctor will read with pleasure and which he can turn over to or recommend to his patients, with the certainty that they will pick up new ideas and come back to him to have them worked out.

It is safe to say that not every doctor will agree with everything which Doctor Bowers says, but he will be a strange man indeed who can not absorb from it many good ideas and much of the stimulation that we all need to enter upon the new and inviting fields of therapy which are constantly opening before us.

WILLIAMS: "LABORATORY METHODS"

Laboratory Methods. With Special Reference to the Needs of the General Practitioner By B. G. R. Williams, M. D. and E. G. C. Williams, M. D. Third edition. Illustrated with 43 engravings. St. Louis: C. V. Mosby Company. 1915. Price \$2.50.

This is the third edition of Williams' excellent laboratory manual, which is already

so well known to the readers of this journal that it hardly seems necessary to speak another word in its praise. Dr. B. G. R. Williams, one of its authors, has been a very frequent contributor to the pages of *CLINICAL MEDICINE*, and our readers by this time are fully aware of the exceptionally practical character of his contributions. In this volume he eschews theory and describes simple tests whose value has already been determined by careful use in his own laboratory and which can be applied by any general practitioner of intelligence and average skill in his own office.

The book, though small, covers a wide field. In addition to an introductory chapter, giving the details concerning laboratory equipment, it contains chapters on the sputum, bacteriologic diagnosis, examination of the blood, the gastric juice and intestinal contents. He also describes such common tests as the Widal reaction and diazo reaction, tells how to find the treponema pallidum, and gives simple methods of water analysis, and the technic of a private postmortem.

This brief review can only hint at the numerous practical problems dealt with in this volume. In the new edition, presented herewith, the authors have added considerable new material, most of which appears in the appendix.

GILE: "NOSE, THROAT AND EAR"

The Nose, Throat and Ear, Their Functions and Diseases. A Treatise upon the Breath-Road, Food-Road and Accessory Organs. By Ben Clark Gile, M. D. With 131 illustrations, eight of which are printed in colors. Philadelphia: P. Blakiston's Son & Co. Price \$2.75.

One serious objection to most of the books dealing with the medical specialties is that they are inclined to be too "scientific," meaning too technical and abstruse. While such books are excellent manuals for men who are already well instructed in diseases of the eye, nose, throat, or genital organs (as the case may be), it is difficult for the general practitioner to get out of them anything of special value to him. Doctor Gile's book is different. While it is written by a specialist, and to some extent for specialists, the author undoubtedly had in mind the requirements of the general practitioner; and, accordingly, he has dealt with the simple expedients, has not overlooked the demands of medicinal therapy, and has given considerable attention to the minor technical details without

which a book of this kind is worthless as an aid to actual treatment.

Armed with Doctor Gile's book, any good physician can get a very fair idea of the apparatus necessary for his special work, and with a little personal instruction can use such apparatus intelligently. The writer was particularly interested in Doctor Gile's list of remedies employed in the usual routine of his practice. It would be to the advantage of any practitioner to provide himself with these remedies and learn how to use them; and this he can easily do if he has a book like this one on hand for reference.

Of course, this book contains the usual details concerning the common laryngological and rhinological operations, but it also contains much that is of value in nonoperative treatment. All things considered, it is certainly one of the best books of this kind ever published for the general practitioner.

WADSWORTH: "POST-MORTEM EXAMINATIONS"

Post-Mortem Examinations. By William S. Wadsworth, M. D. With 304 original illustrations. Philadelphia: W. B. Saunders Company. 1915. Price \$6.00.

There are thousands of physicians in this country who are called upon from time to time to make postmortem examinations; and for that matter any physician may be required to do this at some time and it is essential that he should be prepared to do it with some idea of the information to be obtained, and with some skill in technic. There has been a great need for a volume written by a thoroughly practical man and developing the technical side of the autopsy. Doctor Wadsworth has had the experience, through his long training as coroner's physician to the City of Philadelphia, and that he has technical skill is attested by the masterly way in which he has explained just how autopsies are to be made and just what is to be accomplished thereby. The book is the most beautifully illustrated of the kind which we have ever seen. Merely by an examination of the pictures a man of quick insight can grasp most of the essentials of the art of making an autopsy.

Many pages are devoted to the discussion of instruments, mortuaries, the general and external examination of the body, the dissection, including the primary cut, the opening of the chest, the abdominal exploration, and the routine examination of the viscera. Special regions and organs are taken up and discussed in minutest detail.

There is a splendid chapter upon medicolegal postmortems, in which the author discusses the cause of death, coroner's examinations, medical evidence, exhumation and embalming, and such special topics as abortion, asphyxia, burns, scalds, homicide, in, sanity, sexual crimes, gunshot wounds-electrical wounds, poisons and the like.

There is also an interesting discussion of the making of photographs, of the repair of the body after a postmortem has been made; and the book concludes with a list of books useful for the men who are required to do postmortem work.

FRENCH: "ACTIVE-PRINCIPLE THERAPEUTICS"

Elements of Active-Principle Therapeutics. By J. M. French, M. D. Chicago: The Abbott Press. 1916. Price 50 cents.

There has been a very pressing need for a small book which would present, in the most direct possible manner, the fundamental essentials of active-principle therapeutics. The task of preparing such a volume has been undertaken by Dr. John M. French, and he has done it splendidly. We fail to see how any man who reads this little volume can fail to be convinced of the advantages of active-principle therapy.

The book begins with a brief story of the development of this method of therapeutics. Next comes a chapter on fundamental laws. This is the heart of the book. It tells why the doctor should use active principles as compared with galenics; why he should employ the "small doses, frequently repeated"; why and how acute diseases may be aborted in their early stages; when single remedies should be used and when the simple combinations; and the importance of beginning early in treating disease. In other chapters Doctor French discusses the *materia medica* of active-principle therapy.

The application of this method of therapeutics is illustrated by detailed descriptions of methods employed in the treatment of pneumonia, typhoid fever, the acute infectious disorders, and some of the chronic maladies.

Aside from its remarkable intrinsic merit, the book is a delightful one to read. It is so small that the physician can finish it in a few hours, and so convenient that it can be carried in the pocket. We are convinced that thousands of readers of *CLINICAL MEDICINE* will in the pocket. We are convinced that thousands of readers of *CLINICAL MEDICINE* will want a copy.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6205.—“Treatment of the Cigaret Habit.” D. E. M., California, asks if we know of an antidote for the cigaret habit? He has tried one plan, that cut the habitue from the use of two packs to two cigarettes daily, and, naturally thinks that if the addict could be content with two he should be able to cut out cigarettes entirely.

There is, of course, no positively specific treatment, but if a weak silver-nitrate solution, applied topically, in the mouth, is employed conscientiously, the desire for cigarettes is materially decreased or lost altogether; in fact, while the action of the drug lasts, it is almost impossible to smoke a cigaret. As a rule, however, the smoker “forgets” to rinse his mouth with the silver-nitrate solution, and as a result a cure is not attained.

The writer has used atropine valerate in fairly full doses with considerable success: a tablet containing xanthoxyloid, gr. 1; atropine valerate, gr. 1-250; cactoid, gr. 1-32; strychnine valerate, gr. 1-128, and nuclein, minimis 5, may also be given every three to four hours, with reasonable probability of proving efficacious. At the same time *thorough* elimination should be maintained, and the patient receive iron and other tonics in rather large doses. In nearly every case some digestive combination, with or immediately after meals, is required.

Another excellent plan is to switch the cigaret smoker over to a very mild tobacco and pipe, and gradually decrease the number of pipes. Here, as elsewhere, a great deal depends upon the individual's desire to rid himself of the habit. In some cases the mucous membrane of the throat and nose requires spraying with a mild alkaline anti-septic. It is quite true that a man who only has to smoke two cigarettes a day can get along without them entirely, but the point is

that he does not want to do so badly enough.

QUERY 6206.—“Malarial Hematuria,” V. F. S., Texas, reports the case of a boy 14 years old, weighing about 150 pounds, fair, and clear skin and eyes, who is subject to attacks of malarial hematuria. Temperature 101° to 102° F. Suffers no pain, and there is no nausea. He submits sample of urine and asks for diagnosis, prognosis, and treatment. The boy has taken two treatments for hookworm. Worms were found in the stool. Plasmodium malariae are present in blood, and the urine contains staphylococci, streptococci, bacillus coli, red cells (very much destroyed), and albumin to the extent of 18 Grams per liter.

It is quite evident that this little fellow is in bad condition. While he suffers from malarial hematuria, there is also a pus-producing area somewhere. A very careful examination should be made. It is more than likely that there is cystitis. If the doctor will give us a clear idea of general conditions and a short history of the case we shall be in a position to aid him more intelligently. In the mean time, we would be inclined to give one or two injections of emetine hydrochloride. This drug has proven efficacious not only in malarial hematuria but also in hemoglobinuria.

It is quite evident that arbutin and hexamethylenamine (with hamameloid probably) are indicated. Quinine must be given with care. The patient must be very carefully dieted, and do not forget that barley water or other mucilaginous beverage should be consumed freely. Be sure to state the morning and evening temperature. Upon receipt of clearer clinical data, we shall be in a position to make further and more definite suggestions.

QUERY 6207.—“Cerebral Hemorrhage.” J. W. S., North Carolina, reports the following case: Male age 57, farmer, temperate. No specific disease, hard manual worker; 6 feet high and weighs 150 pounds. Good habits. Married. Attacked about three months ago with slight form of hemiplegia of left side. This was slight, and he was able to use his feet and hands in a few days and to walk as usual. However, the pupil of his eyes contracted to pinpoint size, and he cannot see well. There is a numbness of his arm and hand that requires rubbing to relieve. He has pain on top of his head that annoys him and is sometimes sharp momentarily. During these attacks there is twitching of the muscles of the face. His tongue and speech are not affected. He has been treated by two other physicians. The blood pressure is high. Kidneys and bowels natural in action.

The symptoms are decidedly peculiar, but apparently point to localized intracranial pressure presumably resulting from cerebral hemorrhage. The main thing is to ascertain the character, cause and exact location of the lesion. The reflexes should be carefully tested and the ocular fundus examined. Ascertain if the slight hemiplegia came on after unusual exertion or profuse sweating followed by chilling of the body. Also a Wassermann reaction should be made to determine the presence or absence of syphilis.

Also a specimen of the patient's urine (four ounces from the twenty-four hour output, stating total quantity voided) should be examined. In the meantime, eliminate thoroughly, and push arsenic iodide in alternation with lecithin, and try to build up the patient.

QUERY 6208.—“Fecal Incontinence”. W. S. G., Iowa asks help in the case of a boy 8 years of age, who for several months has not been able to retain the contents of his bowel. The child has been given large doses of bismuth salicylate which is helping to the extent that the stools are getting lumpy, but still there is inability to control evacuation. The boy does not seem to know when the bowels are going to move. Thinking some intestinal parasite might be a causative factor the doctor submitted a sample of feces for examination, but no parasites were found. There were many triple phosphates, a few pus cells, and a moderate amount of squamous epithelium.

We suggest giving two or three copious enemas of a solution of the sulphocarbonates;

then a few small divided doses of calomel, podophyllin and bilein, followed by some good digestive mixture containing pepsin, fifteen minutes before meals; dilute phosphoric acid, ten drops with water (sweetened if desired) with meals and pancreatin and papayotin, in combination, an hour after eating; midway between meals brucine and berberine, small doses. Have the boy wear a flannel band. Each night before he retires instruct his mother to massage the abdomen with a little warm olive oil, making a circular motion following the course of the colon.

The cause of the incontinence we are unable to determine from the evidence submitted. There may be an ulcer in the rectum, or other intestinal lesion; or, there may be some serious trouble of the central nervous system.

QUERY 6209.—“Fate of Urotropin in the Body.” V. G. A., Texas. Concerning your somewhat indefinite query, the following facts, briefly stated, probably cover what you wish to be told. Being of comparatively recent determination, they are not as widely known as should be.

The formaldehyde (formalin) is set free from its combination in urotropin (hexamethylene-tetramine) only in a medium possessing an acid reaction (as measured by the concentration of hydrogen-ions). But this, in the physiologic fluids, is true only for the gastric juice and frequently as to the urine. Consequently, according to P. Hanzlic, who writes in the *Archives of Internal Medicine* for 1913, none of the other normal body-fluids, being alkaline in reaction, is capable of splitting urotropin and thus liberating formaldehyde.

The author quoted also never found any of the pathologic body-fluids of acid reaction, those tested being the urine of diabetics, bile of typhoid liver, edema-sera, tuberculosis pus, ascites, cerebrospinal liquor in lues, tetanus, meningitis, and some others; and these never liberated formaldehyde—which also is true of the alkaline urine of cystitis. Contrarywise, the acid urine (measured by H-ions) in various forms of nephritis and in cystitis invariably set free the hexamethylenamine.

QUERY 6210.—“The Diphtheria Bacillus.” J. S. T., Nebraska, propounds the following: “Can a swabbing of the throat of suspected diphtheritic patient be isolated in any way

except by nutrient agar-agar or Loeflér's blood serum? If so, how? Could a swabbing taken late one night be passed upon early next morning without these culture media? Is it possible to isolate the organism with the microscope, from a cover-glass specimen, that night or the next morning, without cultures being made? Could a severe case of diphtheria be completely cured in two days so that swabbings sent to two different bacteriologists failed to isolate even one little germ? What do you think? Will thank yo very much for information on this matter."

In answer to your first question, "Can a swabbing of the throat of a suspected diphtheria patient be isolated in any way except by nutrient agar-agar or Loeflér's blood serum," I would say that there would be some difficulty in isolating it on ordinary plain agar-agar, the diphtheria bacillus preferring a serum media, especially one containing glucose. On a good Loeflér's blood serum, the diphtheria bacillus will have multiplied to a considerable extent in ten or twelve hours—long before the other bacteria have increased appreciably. In all first-class laboratories the culture is examined after twelve hours' incubation and, if negative, again after twenty-four hours.

However, if the swabbing was obtained from the edge of the membrane and a smear was made upon a glass slide, properly stained, and examined by an expert, the diagnosis could be made immediately. Therefore, it is possible and probable that an expert could make the diagnosis from a swabbing taken at night and passed upon in the morning—in fact, he could pass upon it in fifteen minutes. The writer always makes a smear and very rarely errs in diagnosis. It is absolutely essential, however, that the smear be taken from the edge of the membrane, consisting as it does of fibrin, epithelial cells, and leucocytes, is dead tissue and is necessarily infected with such an enormous number of saprophytes, streptovocci, staphylococci, and the like, that they completely overshadow the diphtheria bacilli.

A really severe case of diphtheria, so far as my experience has shown, could not be completely cured in two days so that swabbings would fail to show the bacilli, provided the swabbings were properly taken and properly cultured and examined.

For many years it has been the rule in all health-department laboratories, before releasing a person from quarantine, to require two negative cultures on two successive days,

the cultures to be taken from the throat and nose. Further, it is absolutely essential that no antiseptic be used for two to three hours prior to taking the culture.

From the general trend of your letter, I imagine that some one has made a diagnosis of diphtheria microscopically and that two days later the patient apparently recovered and that then swabbings were submitted to two other pathologists, who failed to find the bacillus. The possibilities in this case are as follows:

First, it may have been true diphtheria. The bacilli were found by the first examiner, but, owing to improper methods, were not found by the other pathologists two days later, either because the smears were not properly taken or an antiseptic had been used on the throat, or the examination failed to reveal them, notwithstanding they were there. Or, it is possible that it was not diphtheria, that the first pathologist found a pseudodiphtheria bacillus or a streptococcus mucosus, with a capsule in short chains, resembling the diphtheria bacillus and necessarily, as it was not diphtheria, the second examination by two other bacteriologists was negative.

Diphtheria antitoxin has little or no effect upon the diphtheria bacilli in the throat. After its administration it is true the membrane tends to regress but unless antisepsics be used the bacilli persist in the throat and especially the nose for many days thereafter, notwithstanding the patient has clinically recovered.

QUERY 6211.—"Scientific Determination of Paternity." F. A. R., Texas, requests us to explain the procedure whereby the father of an unborn child can be identified.

The test to which you refer has received comparatively little attention in this country, but we understand that in France, one or two legal decisions have been rendered on the strength of it. We are not sufficiently familiar with the technic to furnish you with a satisfactory outline: However, the principle is, that the woman is vaccinated with red cells from the blood of the suspected man. Should he be the father of the child, a reaction similar to that observed in the Von Pirquet test occurs in the pregnant woman. Sensitization of the woman (producing the reaction) is believed to occur as early as two weeks after impregnation.

If we are able to find literature upon this subject, we may give further details.

QUERY 6212.—"Undeveloped Mammary Glands." T. H. S., Texas, is treating a girl, just sixteen years old, who for the last year and a half has been excessively intimate with two young men.

"The symptoms that first attracted her mother's attention and for which I was consulted were, excessive menstruation—lasting about ten days of the twenty-eight—and neuralgia of the ovaries, the pain radiating all through the abdominal nervous system. After two weeks' treatment, all the pain, menorrhagia, and the like, has subsided. The os uteri was dilated, to secure free drainage, and the womb was irrigated with a 5-percent silver-nitrate solution. Glycerin tampons were employed, to deplete the congested tissues. I also gave her this mixture: Specific pulsatilla, drs. 2; specific passiflora, drs. 4; specific gelsemium, dr. 1; water and whisky, equal parts, to make 4 ounces. Dose: One teaspoonful every four hours during the daytime; the last dose at bedtime.

"This girl is small and her mammary glands are very poorly developed. Her people are quite well off and the girl doesn't mind spending some money if she can get what she wants; in this instance, a well-developed pair of mammary glands. Her flat breast gives her a stooped appearance. The question is, how can we make those breasts grow? Will corpus luteum do it? It seems to me that the drain upon her nervous system that has been going on for a year and a half is responsible for this condition."

If you will study this matter with a little care, doctor, you will realize that, when an immature girl receives the constant attention of two men, it is not likely, especially under the circumstances described, that her mammae will develop properly. Had she become pregnant, the breasts then would have developed in the ordinary way; but, with the intense pelvic congestion and constant drain upon the nervous system occurring, it is not at all surprising that the breasts of a girl of sixteen who for eighteen months has been cohabiting with not one, but two men, have failed to develop normally—indeed, that the development was anything but a vicious congestion of the pelvic viscera, as is the case.

As to correction of the trouble, corpus luteum is hardly likely to prove beneficial. Were this girl our patient, we would look her squarely in the eye, and tell her that, if she wants to become a normal woman, she must act as a decent normal girl at her age should

act. Let her give those two young fellows their permanent *congé*, or at least get rid of one of them forever and tell the other that there may be some chance for him to marry her in two or three years, provided he will behave. When she has gotten rid of these lovers, she must absolutely refrain from resorting to substitute measures; that is to say, until she has acquired her full development she must let her sexual functions remain in absolute abeyance.

If your statements are correct, as we may assume they are, this girl commenced a strenuous sexual life at the early age of fourteen years and six months. The present writer, has, of course, known many cases in which the same thing has occurred even earlier, but it is rather unusual, unless the patient suffers from some uterine disorder or nymphomania, for a girl of that age to receive the constant attention of two men.

We strongly advise that you continue the depletive treatment. Then, in order to give the patient something to do, instruct her to massage the breasts with lanolin and coconut-oil (equal parts), but carefully *avoiding pressure about the nipple-area*. She may rub in half a dram of this night and morning. You should also impress upon her the fact that, no matter how much money she has, she can not buy a pair of mammary glands, except of the rubber variety. What this girl needs is good honest advice—and to learn that beauty and right living go hand in hand.

PICK-UPS FROM HERE AND THERE

Mure said: "It is my belief that the poisons of serpents, if sufficiently proven, would furnish the safest and most rapid means of combating all human infirmities." Surely—if sufficiently proven! Wish he would begin with old age. Then take up darn foolishness.

Subjective pain incident to childbirth serves no purpose in nature, but is an unnecessary result of an unchangeable natural law, that all severe muscular effort is accompanied by pain.—Rongy and Arluck, *Medical Standard*.

C. K. Humiston got data from 66 great surgeons on several points. Among them was, the use of anodynes after operations. The composite answer (*Ill. Med. Jour.*) was, to give them when they are needed. *Nota bene:* The country is safe!

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